DOCUMENT RESUME

ED 168 886 SE 027 517

AUTHOR	Schoenfeld, Clay, Comp.; Desinger, John F., Comp.
TITLE	Environmental Education in Action - III: Case Studies of Public Involvement in Environmental Policy.
INSTITUTION	ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, Columbus, Ohio.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	Jan 79
NOTE	210p.; For related documents, see ED 141 185 and ED 152 557; Contains occasional light type
AVAILABLE FROM	Information Reference Center (ERIC/IRC), The Ohio State University, 1200 Chambers Rd., 3rd Floor, Columbus, Ohio 43212 ($5.50)
EDRS PRICE	MF01/PC09 Plus Postage.
DESCRIPTORS	Case Studies; *Citizen Participation; Citizen Role; *Conservation Education; Environment; *Environmental Education; *Policy; *Policy Formation; Politics; Public Policy
IDENTIFIERS	Information Analysis Products

ABSTRACT

Presented here are 27 case studies of public involvement in environmental policy. These are examples of environmental education or communications programs developed by local, state, regional or national environmental action groups. The reports tell how the groups have successfully, or unsuccessfully, mobilized public opinion in favor of beneficent land use of recycling of wastes, or against a potential plant site in favor of pollution control legislation, or towards incorporating environmental studies more effectively in school curricula. (Author/BB)

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ENVIRONMENTAL EDUCATION IN ACTION--III: CASE STUDIES OF PUBLIC INVOLVEMENT IN ENVIRONMENTAL POLICY

Selected and Edited by
Clay Schoenfeld
and
John Disinger

ERIC Clearinghouse for Science, Mathematics,
and Environmental Education
The Ohio State University
College of Education
and
School of Natural Resources
1200 Chambers Road, Third Floor
Columbus, Ohio 43212

January, 1979

SE 027 517

ENVIRONMENTAL EDUCATION INFORMATION REPORTS

Environmental Education Information Reports are issued to analyze and summarize information related to the teaching and learning of environmental education. It is hoped that these reviews will provide information for personnel involved in development, ideas for teachers, and indications of trends in environmental education.

Your comments and suggestions for this series are invited.

John F. Disinger
Associate Director
Environmental Education

Sponsored by the Educational Resources Information Center of the National Institute of Education and The Ohio State University.

This publication was prepared pursuant to a contract with the National Institute of Education. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their judgment in professional and technical matters. Points of view or opinions do not, therefore, necessarily represent official National Institute of Education position or policy.

FOREWORD

In the United States, the decade of the sixties proved to be the time when the "software bills" came due. Civil rights, women's rights, and citizen participation in the development and application of government policy all gained national attention as critical social issues to be addressed.

The decade of the seventies will be remembered as the decade when the "hardware bills" come due. Long-term neglect of land, air, and water systems—life support systems—and abuse of other finite resources, such as fossil fuels, has brought the natural resources debate and institutional responses to the forefront of national dialogue.

The decade of the eighties will be the decade of collision between the "software" and "hardware" issues, reflecting a search for how individuals' rights and values, community well-being and national resource priorities can be wedded in a new social and political synthesis. Issues of environmental protection, economic stability, and resource sufficiency will meet again and again in social, economic and political forums, vying for dominance.

How these interlocking concerns will be balanced and resolved will depend to a great degree on the quality and capacity of citizen participation.

The twenty-seven case studies which follow are tributes to the difference a participating public can make. Each case stands as testimony to the inherent strength in the democratic process.

If the challenge of accommodation is to be met in the eighties, the public will be required to understand not only the substance of the issue, but the process of public policy development so that they may engage in its evolution. The problems are complex and the stakes for the individual and this nation are high.

These case studies provide the insight, and reinforce the intuitive urge to "get involved."

I commend the Educational Resources Information Center in providing an important public service by making these case studies available. It is our hope that these case studies will receive widespread attention to enhance citizen involvement in the 1980s.

Joan Martin Nicholson, Director
Office of Public Awareness
U.S. Environmental Protection Agency

January 1979

PREFACE

The studies in this volume were solicited by the editors, based in large part on recommendations of members of the National Association for Environmental Education. An attempt was made to secure studies from a broad spectrum of emphases. Most of the studies were written specifically for this compendium, on request. The editors thank the authors of these studies, and their organizations, for their willingness to prepare them, and particularly for their response to the admonition for straightforward reporting and analysis. The case studies are arranged alphabetically by last name of senior author.

The editors previously collaborated on Environmental Education in Action—I: Case Studies of Selected Public School and Public Action Programs, published by ERIC/SMEAC in January, 1977, and Environmental Education in Action—II: Case Studies of Environmental Studies Programs in Colleges and Universities Today, published by ERIC/SMEAC in February, 1978.

C.A.S.
J.F.D.

January, 1979

ABOUT THE EDITORS

CLAY SCHOENFELD is Joint Professor of Journalism and Wildlife Ecology, and Chairman of the Center for Environmental Communications and Education Studies at the University of Wisconsin-Madison. From 1969 to 1975 he was the founding executive editor of The Journal of Environmental Education. He helped draft the National Environmental Educaion Act of 1970. His other books in the field include Everybody's Ecology, Outlines of Environmental Education, Interpreting Environmental Issues, Human Dimensions in Wildlife Programs, Wildlife Management in Wilderness, Canada Goose Management, Cabins, Conservation and Fun, and Wisconsin Country. Professor Schoenfeld is a member of the Board of Directors of the National Association for Environmental Education, and the American Forestry Association, and a consultant to the U.S. Office of Education, the Conservation Foundation, the National Park Service, the Bureau of Land Management, the U.S. Forest Service, the U.S. Army Corps of Engineers, and the Wisconsin Environmental Education Council.

JOHN DISINGER is Associate Director for Environmental Education, ERIC Information Analysis Clearinghouse for Science, Mathematics, and Environmental Education, and Associate Professor of Environmental Education, School of Natural Resources, The Ohio State University. Prior to joining both ERIC/SMEAC and the School of Natural Resources in 1971, he was a junior high school teacher in the West Irondequoit, New York, schools. His publications include the compiling and editing of four editions of the ERIC/SMEAC Directory of Projects and Programs in Environmental Education, Environmental Education 1975: A State-by-State Report, Environmental Education Perspectives and Prospectives, and Environmental Education Activities of Federal Agencies. Dr. Disinger is a member of the National Association for Environmental Education and the Conservation Education Association, and a member of the Board of Directors of the Ohio Alliance for Environmental Education.

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ENVIRONMENTAL EDUCATION IN ACTION—III:
CASE STUDIES OF PUBLIC INVOLVEMENT IN ENVIRONMENTAL POLICY

PROLOGUE

What is education is in the eye of the beholder. One person's "act or process of developing and cultivating mentally and morally" (Webster's definition of education)—that same act or process is another person's "concerted effort to spread particular doctrines" (Webster's definition of propaganda). Between an antiseptic imparting of "facts" and a vigorous marketing of "opinions" the line is frequently thin and grey, and the subject of continuing public and professional debate. Nor is there always a consensus about who should establish the goals of education—public or professionals.

Questions concerning the role of elementary and secondary schools in defining social goals, for example, have long given rise to heated controversy (Grinnell and Young, 1955). Today there are advocates of the belief that social goals should be defined by the general public and handed to school people for implementation. On the other hand, there are those who believe it is essentially the responsibility of the schools to take a leading role in society and to determine which direction change should take.

Just so, some university professors are deeply involved in the ordering of public values and public goals, while others say such a role is either too controversial or too nonacademic to handle. Some are firebrands, attempting to reshape society; others have settled for studying it (Roddy, 1964).

Occupying a middle ground in the continuing debate are America's instrumentalities of non-formal education, epitomized by the voluntary citizen organization. While recognizing the strategic importance of antiseptic, cognitive substance in any educational program, such organizations have not eschewed media and methods of affective persuasion. For them, education typically has a moral purpose quite as much as a mental objective, and each organization establishes its own agenda.

Perhaps because one of the root stocks of environmental education was the long-time work of conservation groups, environmental education has never been seen as merely a course in ecology; it has always had a crusading caste. In the maiden issue of The Journal of Environmental Education in 1969, for example, environmental education was defined as "communications aimed at producing a citizenry that is knowledgeable concerning our environment and its association problems, aware of how to help solve those problems, and motivated to work toward their solution" (The Editor, 1969). That definition encompasses not simply a passive curriculum but a call to action.

What are the concepts embodied in the use of the term environmental education, and particularly in counterdistinction to antecedent forms of conservation education? The key concepts were distilled in that same issue of the JEE:

In locus, the fouled, clogged arteries of the city quite as much as scarred countryside.

In scope, a comprehensive, interrelated humankind-environment-technology system.

In focus, global environmental impacts of crisis proportions threatening the well-being of all humankind on an overcrowded planet.

In content, tough ecological choices, not easy unilateral fixes.

In strategy, long-range impact analyses and rational planning.

In tactics, grass-roots participation in resource policy formation—in the streets and through institutional channels.

In prospect, a necessary reliance on alternative sources of energy.

In philosophy, a commitment to less destructive technologies and less consumptive lifestyles.

It would be a mistake, of course, to assume that all of these concepts have been shared equally by all the individuals, groups, and agencies flying an environmental flag. Environmental education has called for action in one of the three principal modes that characterize the reactions of Americans to social problems—retreat, revolt, and reform (Kelly, 1975).

Allied with a wave of anti-materialism current in the late 1960s and early 1970s, environmental education of one mode has called for a type of counter-culture. Carried to the ultimate, this retreat from modernity has led thousands of young people back to wood-heated country cabins, if not to desert communes.

Allied with a wave of pro-civil rights and anti-Vietnam riots also current in the late 1960s and the early 1970s, environmental education of another type has called for guerilla tactics against despoilers of the environment, if not an outright assault on capitalism. The "battleground tactics" recommended in a "field manual" of the day ran the gamut from petitioning and picketing to outright "perturbance of the system" (Love, 1971).

More commonly, environmental education has called for reforms on the part of existing public and private institutions, or for the creation of new and more enlightened instrumentalities in both the public and private sectors. Particularly, environmental education has been directed toward more extensive and enlightened public participation in the formation and implementation of environmental policy, again in both the public and private sectors (Caldwell, Hayes, and MacWhirter, 1976).

Responding to public pressures, Congressional prescriptions, and court decisions, resource agencies at all echelons have tried to preside in recent years over what has been called a "participation explosion"

(Wengert, 1976), characterized by public meetings and hearings, opinion polls, workshops, surveys, advisory committees, lobbying, arm-twisting, and other mechanisms for public involvement in resource management decision-making (Heberlein, 1976). Perfecting patterns of public involvement in environmental affairs may prove as challenging as managing the environment itself (Sewell and O'Riordan, 1976). The current general philosophy seems to be: "If war is too important to be left to generals, the environment is too vital to be left to professional land managers" (Robinson, 1975).

While public involvement in environmental affairs may have often led to what Daubert (1978) calls "conflict management" on the part of agency and industry personnel involved, from the perspective of the participating publics public involvement is both an end product of environmental education and an intimate aspect of environmental education itself. At least that is our point of departure in this volume.

Local, state, regional, and national environmental action groups of various persuasions have developed environmental education/communications/propaganda programs—call them what you will—in support of their action goals. From a representative nationwide sample of such groups we solicited reports about how they have successfully—or unsuccessfully—mobilized public opinion in favor of beneficient land use, or recycling of wastes, or against a potential plant sitting, or in favor of pollution control legislation, or toward incorporating environmental studies more effectively in school curicula—or whatever. The result is this collection of case studies of a new American phenomenon—citizen education for environmental action, public involvement in environmental policy.

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ENVIRONMENTAL EDUCATION PROGRAM FOR COMMUNITY LEADERS IN LEE COUNTY

by Bob T. Chapin*

Cooperative ("Ag") Extension is often described as the most effective adult education activity in the United States, one of the oldest, probably the largest, and certainly the most fully developed. A unique partnership undertaking between each state land-grant college and university and the United States Department of Agriculture, in cooperation with local governments and local people, the workhorse of the system is the county agent, backstopped by campus specialists. Where once ag extension was pretty heavily into the business of spraying, ditching, and draining, today it is increasingly performing a leadership role in enlightened land use planning, natural resource management, and energy conservation. This case study outlines the work of a Mississippi CES Land Use Center in energizing the adoption of a county land use plan.

Overview

The overall objective of the Program for Environmental Education of community leaders in Lee County, completed in August 1976, was to create awareness of the Lee County land use plan and to emphasize the plan's importance to the county, to the communities and to the environment.

Specific sub-objectives were to assist community leaders in:

1) Realizing that their community had environmental problems;

2) Acquiring a knowledge of resources available at the local level to improve the environment;

3) Gaining understanding of the relationship of population, economy, transportation, housing and public services to land use and environment;

Dr. Chapin, A.I.P., A.S.L.A., is Coordinator of the Land Use Center for the Mississippi Cooperative Extension Service, Box 5405, Mississippi State, MS 39762. He was formerly Coordinator of the Landscape Architecture Program at Mississippi State University, held the rank of full professor, and served as a Land Use Planner with the Mississippi Agricultural Experiment Station. Dr. Chapin has drawn over 400 landscape designs and was one of the prime contractors for the State Plan of Louisiana, was in private practice for 18 years, and has developed Comprehensive Plans for many cities, counties and regions. He has also published over 200 professional articles in his 28 years as a planner, educator and landscape architect.

4) Gaining knowledge of the problem-solving process and how the identification of the problem, establishment of the goals, planning action to achieve goals and evaluation of the results must become an integral part of an effective environmental program; and

5) Participating in a land use planning workshop to gain a better understanding of the leader's role in environmental education.

A favorable vote of the Council of Governments, Boards of Supervisors and the municipal officials to carry out the education program was indicative of the success of the objectives.

Several materials were produced, TV and radio spots were made; an eight-minute movie called Consider the Land, newspaper articles and a 17-minute synchronized sound-slide show, The Use of the Land in Lee County, were developed and used to carry the environmental message over the media, in six workshops and to 80 service organizations. A sample questionnaire entitled "Recommendations," a "Resolution," and a "Post Evaluation Form" were distributed at the workshops to evaluate the program.

1. Of the 131 post forms received, 130 indicated that the resolution was adopted.

2. No answer was received from the one dissenting vote.

3. There were 499 projects, in 12 groups, identified for environmental improvements. They included:

   a. clean-up
   b. housing
   c. new roads
   d. utilities
   e. community appearance
   f. subdivision regulations
   g. recreation
   h. erosion control
   i. drainage
   j. timber
   k. crop and pasture improvements

4. From the survey instruments, requests were received and data mailed to the participants for additional Extension information about:

   a. jobs
   b. housing
   c. recreation
   d. drainage
   e. utilities
   f. crop improvements

Of the 58,000 people in Lee County in 1974, leaders attending the six workshops represented 20,726 people. The balance were expected to see the TV spots and programs, or view the plan as a member of a service organization.

Information on the educational packets distributed at the six workshops included a flow sheet listing other agencies which offer environmental assistance. Fifteen resource agencies were used by the participants.

Objective

As indicated above, the overall objective of this project was to create further awareness among community leaders of the Lee County Land Use Plan and its importance to the communities, to the county, and to the environment.

The favorable vote of the Council of Governments, Boards of Supervisors and the municipal officials to proceed with the education program was indicative of the success of the objectives.

Continual public service TV spots were run on Channel 9, WTWV. In addition to 49,000 TV viewers in Lee County, some 80 groups viewed the eight-minute awareness movie made for TV and the 17-minute synchronized sound-slide show. Meetings were held in individual beats:

Tupelo	All Leaders	March 25, 1976
	Itawamba Jr. College	May 14, 1976
Beat 1	Baldwyn	June 28, 1976
	Guntown	June 23, 1976
Beat 2	Saltillo	May 11, 1976
Beat 3	Tupelo	February 26, 1976
Beat 4	Vernona	June 23, 1976
Beat 5	Nettleton	June 21, 1976
	Shannon	June 15, 1976

Various service clubs saw the program as well as several out-of-county, state-wide meetings.

Project Success

The following information deals with the extent to which the project has been successful in the development of educational materials; a program developed for county-wide land use awareness and its value to improve the environment is included.

The first mini-grant workshop met in Tupelo, February 26, 1976. Thirty-three leaders of the county were in attendance representing some 20,726 people of Lee County. Most leaders were mayors, members of boards of supervisors, and other local Council of Government members.

A tentative program was presented, to be used as a format for the later meetings, and the leaders asked what was their pleasure in continuing the land use education program county-wide. They voted unanimously to do so.

Twelve meetings were held through June 30, 1976. Meetings occurred in each district and major municipalities within Lee County. The Council of Governments reports 80 meetings were held using the educational materials developed.

The participants scored the land use presentation as helpful to them in the following manner: 70 percent like it very much; 20 percent, much; and 10 percent, some.

They suggested that land use education materials be made available to junior high, senior high, and college-level students, and to civic clubs. Senior high was mentioned most often.

When asked if they would like additional information about land use, 90 percent of the respondents answered yes. The Land Use Center mailed out information as requested (see below).

Of those requesting more land use information, 80 percent wanted urban land information; 30 percent wanted surface water information; 20 percent wanted pasture information; 10 percent forest information; and 10 percent cropland information. Many wanted more than one piece of data, therefore, the total exceeded 100 percent.

The six areas most needing land use development taken from three selected projects ranked by participants were: 1) jobs, 80 percent; 2) housing, 80 percent; 3) recreation, 40 percent; 4) drainage, 30 percent; 5) utilities, 30 percent; and 6) crop improvements, 20 percent.

A sample questionnaire entitled "Recommendations" from which the above information was summarized, and a typical agenda, resolution, and post evaluation are presented in Appendices A, B, C and D.

Evaluation

The post-evaluation summary, related item-by-item to the objectives, indicated the broad spectrum covered by the educational program.

Of 131 Post Evaluation Forms received, all but one indicated the Land Use Resolution was adopted.

No answer to this question was received from the one dissenting vote.

There were 499 projects reported from the workshops; reduced to percentage in 12 groups, they are:

Percentage	Projects
12.22	Clean-up
6.21	Housing
8.02	New Roads
8.62	Utilities
6.81	Community Appearance
6.41	Subdivision Regulations
14.23	Recreation
8.42	Erosion Control
7.62	Drainage
7.21	Timber Improvements
5.61	Crop Improvements
8.62	Pasture Improvements
100.00	

Development projects in individual Lee County areas ranked most important were: 1) recreation, 2) clean-up, 3) drainage, 4) housing, 5) erosion control, and 6) crop improvements.

Resources used by the group identified at the workshop in percentage values were:

Percentage	
4.60	EPA
6.74	FmHA
10.84	ASCS
3.94	Community Development Foundation
11.49	Lee County Board of Supervisors
2.30	Mississippi Resource and Development
3.29	U.S. Department of HEW
9.03	County Extension Leaders
2.30	State Health Department
6.40	Council of Governments
12.81	Lee County Soil Conservation District
3.94	NE District of Miss. Forestry Commission
5.58	NE Branch Experiment Stations
10.67	Mississippi Cooperative Extension Service
3.61	USDA Soil Conservation Service
2.46	
100.00	

A rank of the most important policy decisions the participants felt were needed, from first to eighth, were:

1) Establish and maintain a balance between agriculture and industry, urban and rural development, and private development and public services.

2) Insure a future for both agriculture and industry.

3) Raise the economy, educational level and standard of living in the county, and provide opportunities for each person to develop to his full potential.

4) Recognize and direct growth in order to protect the environment, the established urban area, and the agricultural areas of the county.

5) Protect the county's natural drainage patterns, water supply, air quality, soil types, topography, climate, flora and fauna.

6) Protect natural features and processes that have vital functions such as drainageways, bottomlands, agricultural soils, ground water supplies, and areas with heavy tree cover.

7) Provide a choice of lifestyles—rural, urban or a combination of the two.

8) Identify, plan for, and direct urban development to areas most suited for that purpose and less suited for other uses such as agriculture.

Suggested programs were not listed in this question by any of the participants; apparently they were leaving these decisions to the planners.

Unusual Features of the Project

Involving the people throughout the program in some 80 meetings using all available media, press, radio, newspaper and TV is the most unusual characteristic of this project. The slide set 1) started with the land, considering the soil first and relating its capability to the economy and the people; 2) described the "now aspects" of existing land use conditions; and 3) charted the trends and pointed out the assets and liabilities for the future of Lee County. Post evaluation indicated that our message had been received and that people have established priorities as shown in Question 6 of the post evaluation. The TV film has broad area aspects for use nationwide as a feature and for TV spots.

The information in the program model has been distributed state-wide as a guide to planning agencies needing this type of public relations in Trade Secrets No. 47. I believe it has nationwide significance.

Collaboration With Other Organizations

Collaboration of the Mississippi Cooperative Extension Service with the Lee County Soil Conservation Service, Mississippi Forestry Commission, Northeast District Agricultural Experiment Station,

Farmers Home Administration, Council of Governments, Lee County Board of Supervisors and Extension Land Use Center under a grant by the Office of Education, Department of HEW, helped to develop and implement the educational program. The flow sheet from the education packet (Figure 1) shows how other agencies, some not involved in the program, can also help in land use planning.

Each agency contributed staff time, reviewed and critiqued the visuals before publication and gave individual programs. The educational program was continued through 1977.

A program of the Rural Development Committee of the Mississippi Research and Development Center which met on May 14, 1976 for the Tombigbee Waterway is an example of use of the Lee County slide program by other agencies.

The local TV station and local radio donated public service time for spot announcements.

Criteria and Data

The bulk of the mini-grant fund was used for the development of TV films, slide shows and personnel to insure the best job possible in the most professional way.

Only two data collection instruments were used for sampling the program. One entitled, "Recommendations from the Workshop Meetings" and the other "Post Evaluation" used to determine action generated by the workshop.

Both instruments obtained feedback from the participants which was useful to the planners in developing other programs.

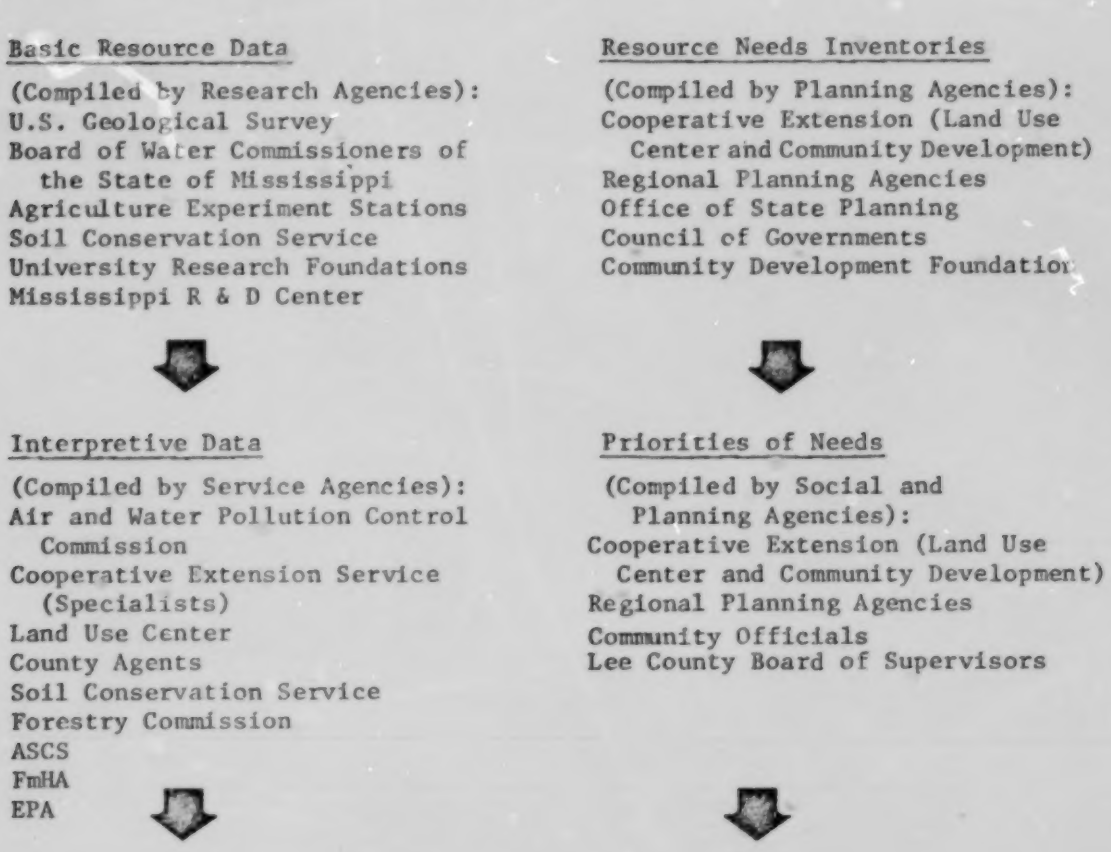
The people, for example, recommended jobs and housing as first magnitude problems, followed by recreation, drainage, utilities and crop improvements.

If we scored our project at the college level using Question 2 from the recommendations with 70 percent liking it very much, we scored well on the program developed, but there is room for improvement.

From the post evaluation we found in Question 3 that the ranking of land use projects underway was: clean-up, housing, new roads and utilities, much in line with participants' first recommendation of what needed to be done. Jobs were not mentioned. I assume participants probably felt they had little power to influence making new jobs.

Question 7 on post evaluation was a weak one. Its purpose was to get recommendations for various types of programs to carry out the policies as ranked in Question 6. The idea was good but the question needs rephrasing since it was not answered by enough participants to score it validly.

FIGURE 1: LAND USE INFORMATION FLOW AND COOPERATING AGENCIES* NECESSARY FOR GENERATING NATURAL RESOURCE USE INVENTORIES


Basic Resource Data
(Compiled by Research Agencies):
U.S. Geological Survey
Board of Water Commissioners of the State of Mississippi
Agriculture Experiment Stations
Soil Conservation Service
University Research Foundations
Mississippi R & D Center
Resource Needs Inventories
(Compiled by Planning Agencies):
Cooperative Extension (Land Use Center and Community Development)
Regional Planning Agencies
Office of State Planning
Council of Governments
Community Development Foundation
Interpretive Data
(Compiled by Service Agencies):
Air and Water Pollution Control Commission
Cooperative Extension Service (Specialists)
Land Use Center
County Agents
Soil Conservation Service
Forestry Commission
ASCS
FmHA
EPA
Priorities of Needs
(Compiled by Social and Planning Agencies):
Cooperative Extension (Land Use Center and Community Development)
Regional Planning Agencies
Community Officials
Lee County Board of Supervisors
Compatabilities of Needs and Resources
(Compiled by Service and Planning Agencies):
Cooperative Extension (Specialists, Land Use Center, Pollution, and Community Development)
Air and Water Pollution Control Commission
Soil Conservation Service
State Health Department
Mississippi R & D Center
Regional Planning Agencies
Potential Natural Resource Use Inventory
Maintained by the Air and Water Pollution Control Commission
Promulgated to the Appropriate Audiences by Cooperative Extension Service
Decision Makers

*There are many other agencies and organizations involved at various times and locations. The agencies listed are those most consistently involved in Mississippi.

Materials Produced

The following exhibit materials are available from the author:

1. Program model for land use educational program in Lee County, Mississippi.
2. Educational packet, "Environmental Factors in Land Use Planning."
3. Radio spot announcements.
4. Synchronized 17-minute sound slide program, "The Use of the Land in Lee County" with script.
5. TV color film 16mm, 8 minutes, "Consider the Land." For use as features and spots.
6. Newspaper clippings.
7. Trade Secrets No. 47.

APPENDIX A: RECOMMENDATIONS

Land Use Workshop

The purpose of the workshop has been to show ways that might help to use the land better in order to improve the environment for you and your family. Many local leaders are interested in what you think. Would you take a few minutes to answer the following six questions so that we may have your recommendations as to what you feel is most important to you and any group which you may represent.

(1) Please list the approximate number of individuals you represent.

_____

(2) Indicate in the appropriate space the amount of help the program has been to you in understanding how long-range planning at the local level can aid in the wise use of land to make a better environment.

____ Very Much ____Much ____Some ____Little ____None

(3) Would you recommend this program be presented to students at the (check those you think appropriate):

____Junior High level, ____Senior High level, ____College, ____All, ____None, Other_____

_____.

(4) Would you like additional information about the use of land?

____Yes ____No

(5) If yes in number 4, please send me more information about:

____Crop land ____ Pasture land ____Forest land ____Urban land ____Surface water Subject desired_____

_____

Send information to: Name_____

Address_____

City_____State_____Zip_____

(6) Number three development projects in your area which you feel are most needed (rank highest as 1): Jobs____ Housing____ Drainage ____ Utilities____ Recreation____ Forest improvement____ Crop improvement____ Pasture improvement____ Other_____

_____

_____.

APPENDIX B: LEE COUNTY COUNCIL OF GOVERNMENTS MEETING

Holiday Inn - Tupelo, MS
March 26, 1976

12:00 Noon	Welcome.	James Robbins, Chairman
P.M.		
12:18	History and Background	Jim Ballard
12:20	Land Use Program	Charles Twitty, Chairman Extension Service
	Consider the Soil First.	Wallace Henry
12:25	Land Use in Mississippi.	Bob Chapin, Mississippi Extension Service
12:30	Presentation of the Land Use and Tape and Slide Program	
12:50	Questions and Answer Period.	
	Fire Protection.	Philip Webb
12:55	Tupelo Projects.	Mayor Clyde Whitaker City of Tupelo
1:00	Adjournment.	

ATTENDING

Mayors

J. R. Ford
C. G. Henderson
Romie Hill
Harold Lindsey
Marlin Morgan
James Robbins
R. M. Webb
Clyde Whitaker (Host)
W. M. Beasley
Frank Riley

Tupelo Board of Aldermen

Paul R. Clayton
John F. Rasberry
Norbin Stone
Kermit Summerford
James R. Williams
J. R. Wilson

Board of Supervisors

Jim Barnett
C. E. Cain
James Long
J. E. Marcy
E. S. McKinney

C.O.G. Staff

Harry Martin
Jim Ballard
Herb Hermann
Jim Vinson
Philip Webb

Land Use Committee

Pete Albritton
Louisdean Ball
Bill Bright
Bob Chapin
Wallace Henry
Bill Hitch
Billy Keaton
Charles Twitty
Judge Russell

Soil and Water Conservation

E. M. Robbins

APPENDIX C: RESOLUTION

WHEREAS, the Lee County Council of Governments is authorized to review, coordinate and recommend comprehensive planning in the geographical area of Lee County, Mississippi; and

WHEREAS, the _____ (Name of Organization) has received the land use plan report of the Council of Governments dated February, 1974;

WHEREAS, Council planners have worked with government organizations in the county to coordinate planning and make necessary amendments;

NOW THEREFORE BE IT RESOLVED that the _____ (Name of Organization) _____ do hereby approve the land use plan as a guide for coordinating planning development in the geographical jurisdiction covered by said organization and state to our best knowledge and belief that the plan is not unreasonably in conflict with any organization plans.

CERTIFICATE

I hereby certify that the above and foregoing resolution duly adopted by a duly called meeting of _____ (Name of Organization) _____ held _____ (Date) at which meeting a quorum was present and voted throughout.

_____
Chairman

_____
Secretary

APPENDIX D: POST EVALUATION

Land Use Workshop

Recently you attended a land use workshop. The attached resolution was given for adoption by your organization. Perhaps it has been misplaced, or you intend to send in additional suggestions. Would you please take a minute to help us to improve future workshops by placing a check or number in answer to these seven questions.

(1) Was the resolution adopted? ____Yes ____No

(2) If no, is your group aware of the plan as a guide for long-range planning decisions? ____Yes ____No ____Will adopt resolution

(3) Check land improvements that are being made as a result of the workshop information:

____Clean-up
____New Roads
____Utilities
____Erosion Control
____Community Appearance
____Drainage
____Timber improvement
____Housing
____Recreation
____Crop improvement
____Subdivision regulation
____Pasture improvement

Other_____

_____.

(4) Rank three development projects in your area which your group thinks are most important. _____

_____

_____.

(5) Check resource people used by your group since the workshop.

____EPA
____FmHA
____ASCS
____Community Development Foundation
____Lee County Board of Supervisors
____Miss. Research and Development Center
____U.S. Department of HEW
____County Agent
____State Health Department
____Council of Governments
____Lee County Soil Conservation District
____NE District Office, Miss. Forestry Commission
____NE Mississippi Branch Experiment Station
____Mississippi Cooperative Extension Service
____USDA Soil Conservation Service
____Air and Water Pollution Control Commission

(6) Please rank by number the three most important policy decisions you feel are needed in your area concerning:

____Recognize and direct growth in order to protect the environment, the established urban area, and the agricultural areas of the County.

____Establish and maintain a balance between agriculture and industry, urban and rural development, and private development and public services.

____Protect the County's natural drainage patterns, water supply, air quality, soil types, topography, climate, flora and fauna.

____Protect natural features and processes that have vital functions such as drainageways, bottomlands, agricultural soils, ground water supplies, and areas with heavy tree cover.

____Insure a future for both agriculture and industry.

____Provide a choice of life-styles—rural, urban or a combination of the two.

____Identify, plan for, and direct urban development to areas most suited for that purpose and less suited for other uses such as agriculture.

____Raise the economy, educational level and standard of living in the County, and provide opportunities for each person to develop to his full potential.

Other_____

_____

_____

(7) List the programs you feel would be most helpful to help carry out the policies checked in (6). _____

_____

_____

_____

_____.

THE PINE CREEK WATERSHED PROJECT

by William M. Crowe*

Where did the recent concept of public involvement in environmental policy come from? Quite apart from its philosophical base in town-meeting democracy, the concept emerged from a growing recognition that environmental planning and action can founder in the absence of community citizen education. Probably no agency has come to this realization more clearly than the USDA Soil Conservation Service in its attempts to implement PL 566. This is the case study of an Ohio small-watershed project that has been at a stand-still since 1973 precisely because of "the public's general lack of knowledge about the project in the early stages, and the lack of public participation in planning and implementation."

Introduction

The Pine Creek Watershed Project is a Public Law 566 (PL 566) project located in southeastern Ohio. PL 566 projects consist of a combination of soil and water conservation measures on private and public land on an area no larger than 250,000 acres (391 mi^2). Dams and other structural measures on upstream tributaries may also be included.

These structural and non-structural measures may combine to constitute a multiple-purpose project. Projects of this type may include benefits such as flood control, erosion and sedimentation control, improved water supply for irrigation and for municipal and industrial uses, improved drainage, enhancement of fish and wildlife, and increased opportunity for fishing, boating, hunting, swimming, picnicing, and camping.

PL 566, The Federal Watershed Protection and Flood Prevention Act, was enacted in 1954. PL 566 projects are based on (1) local initiative and responsibility, (2) state review and approval of local proposals and opportunity for state financial and other assistance, and (3) federal technical and financial assistance.[1] Local enthusiasm, however, is the prime mover for a successful PL 566 project. The plans are developed locally, and conflicting interests in the use of land and water are aired and discussed at public hearings.

The United States Department of Agriculture's Soil Conservation Service (SCS) administers the watershed program. The federal government gives technical help in planning and installing the project

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Mr. Crowe prepared this paper during his graduate studies in the School of Natural Resources of The Ohio State University. His interests are in environmental management, policy, and planning. Currently, Mr. Crowe is an environmental planner dealing with land pollution control for the Ohio Valley Regional Development Commission, Portsmouth, Ohio 45662.

measures and shares the cost of other measures. It also lends money to sponsoring organizations.[2]

The Pine Creek Project is currently listed by the SCS as being on "inactive status" due to local opposition to the project. Inactive status means that federal technical and financial assistance for Pine Creek have been withdrawn. This immediately brought the project to a complete halt in 1973, since the federal government provided such a large share of the total cost and technical assistance for the project. According to local SCS officials, further reinstatement of the Pine Creek Project is only a remote possibility because there exists such strong local opposition to the project.

This paper offers a brief overview of the project from the planning stages to its current status. The controversy that resulted in withdrawal of state and federal support is analyzed in more detail. Finally the case study is summarized and recommendations are offered.

Figure 1 details the chronological sequence of events concerning the Pine Creek Project that have taken place from the initial planning stages up to the present time.[3] Many of these events are more fully discussed as the paper progresses.

Historical Perspective

Application for the Project

The initial plan for watershed protection, flood prevention, municipal and irrigation water supply, and recreational development in the Pine Creek area was drawn up by a group of local sponsors. These sponsors included the Jackson, Lawrence, and Scioto County Soil and Water Conservation Districts, the Lawrence and Scioto Boards of County Commissioners, the City of Ironton, Ohio, the Village of South Webster, Ohio, and the Pine Creek Conservancy District. The Pine Creek Conservancy District was formed to become the legal sponsoring organization for the Pine Creek Project. Its functions and responsibilities are examined in more detail later.

Formal application for the project came on May 1, 1964, to the Ohio Water Commission of the Ohio Department of Natural Resources (ODNR) for review and approval. In their letter of application the local sponsoring organizations assured the Ohio Department of Natural Resources that there was a great deal of local interest in and support for the project.

The application stated that the proposal was discussed with local organizations to obtain reaction and approval and support before application was made. The sponsors contacted local farm organizations, county agricultural extension agents, local town and city administrators, civic clubs, local industry, county commissioners, county school superintendents, sportsmen organizations, managers of the U.S. Forest Service, and members of the Dean State Forest Service. The application stated that the reaction received from all of these groups and individuals ranged from favorable to very favorable.

Most of these contacts were made with organized groups, individuals with political obligations, and leaders of the community. No mention was made in the application concerning discussing the proposal with individual landowners of the watershed—those persons who would be most directly affected by the project.

Upon receiving and reviewing the application submitted by the local sponsors, the Soil Conservation Service began their preliminary studies of the area. These studies would determine if PL 566 funds could be authorized for the Pine Creek Project. The studies were conducted in 1964 and 1965, and in 1966, planning was approved by the SCS. Therefore, the Pine Creek Project was at that point officially entitled to PL 566 assistance.

The studies conducted by the SCS to determine a need for the project always resulted in convincing evidence that a definite need for the project did indeed exist. Whether or not the SCS was acting in accordance with its own interests in addition to the interests of the people of the Pine Creek community is an issue which is not judged in this paper.

Project Description

The Pine Creek Watershed is a roughly triangular-shaped area of 117,800 acres (184 mi^2).[4] The watershed is situated in eastern Scioto and northwestern Lawrence Counties in the southernmost part of Ohio. A small portion extends into southern Jackson County.

Eleven flood prevention reservoirs were planned. These included seven single-purpose flood control structures, two reservoirs for flood control and water supply, and two flood control-recreational reservoirs, along with approximately 57 miles of channel improvement. Non-structural land treatment measures were planned for implementation on about 16,000 acres to control erosion and sedimentation.

It was estimated that the project would take eight years to complete. A total of 98 families were to be relocated.[5]

The SCS stated that when the structures were installed, average annual floodwater damages would be reduced 71 percent.[6] Agriculture benefits to 6570 acres on 265 farms were projected, along with benefits to 18 miles of highways and 6 miles of railroad. Also noted were significant protection to 32 homes and two commercial establishments, and average reduction in damages to the total watershed amounting to $125,680 annually (1972 estimate).

Project Cost Allocation and Benefit-Cost Ratio

Of the 117,800 acres of project lands, 80 percent is privately owned, 18.5 percent is national forest, and 1.5 percent is state forest.[7] The federal government pays the full cost of implementing and

maintaining the watershed project when the project is on public lands. It also assists with the costs on other lands.

The total cost of the project and cost allocation are given below.[8] The 1968 figures represent the initial cost estimates, while the 1974 figures represent an update.

	Total Cost	PL 566 Funds	Other (local and state)
1968	$ 8,414,265	$3,457,331	$4,956,934
1974	10,332,089	4,190,109	6,132,079

A 1977 cost update set the total project cost at $12,500,000.

In February, 1972, the Pine Creek benefits were set at $18,000,000. This resulted in a benefit-cost ratio of 2.2 to 1. The local share of the $8,414,265 was set at approximately $1,000,000. This cost was for land acquisition and administration of contracts. These figures for the local share were set by the Pine Creek Conservancy Board of Appraisers.

A court ruling in March, 1975, held that the Pine Creek Project costs for the local share were below the benefits. The court listed local benefits at $1,180,530.94 and local costs at $961,390.

Benefit-cost hearings were demanded by the primary opposing interest group, Concerned Citizens of Southern Ohio (CCSO). These opponents asked for a re-evaluation of the benefits and costs, this time taking into account all adverse environmental effects that would result from implementing the project.

The Pine Creek Project was authorized before the National Environmental Policy Act (PL 91-190) was put into effect (January 1, 1970). But since the project was still in the implementation stages after this date, this Act required that an environmental impact statement be prepared. (All federal agencies spending federal funds on a project are required under this Act to prepare an environmental impact statement to display any detrimental effects that the project may have on the environment. This report is to be made public.)

However, an environmental impact statement was never prepared because public support for the project continued to deteriorate, and the SCS (the agency responsible for preparing the impact statement) withdrew its support.

The Resultant Conflict and Its Outcome

Introduction

In January and February, 1972, less than one year after construction had begun on the first of the eleven flood prevention structures, letters began pouring into agencies at the local, state, and federal

levels in opposition to the project. The letters also attacked the Pine Creek Conservancy District in relation to its organization and the way it had been conducting business. It was during this time period that major local interest groups played key roles.

Identification of Primary Interest Groups

The Pine Creek Conservancy District (PCCD). The PCCD was formed in 1966 to become the legal sponsoring organization for the Pine Creek Watershed Project. It is a local unit of government with its own power and authority as prescribed in the Ohio Conservancy Act to legally and properly execute the Pine Creek work plan. This Act provides for financing through benefit appraisals and grants the use of eminent domain for acquiring land.

Therefore, the PCCD is the legal agency for providing the local responsibility to:

1. Acquire land, easements, and rights-of-way needed for structural measures.

2. Contract or arrange for letting of contracts for structural measures.

3. Obtain agreements from landowners to plan and apply soil and water conservation measures on the land.

4. Operate and properly maintain the structural works.

The PCCD consists of a Board of Directors, which includes President, Vice-President, Secretary, and Director. These positions are filled by court appointment.

The Southern Ohio Improvement League, Inc. (SOIL). SOIL was formed in September/October, 1973, immediately after state and federal support for the project were withdrawn. This group is made up of proponents who have attempted to promote and arouse public interest in favor of the project since it was declared inactive in September, 1973. Its membership consists mainly of residents from the lowlands of the watershed area. The objective of SOIL is to re-obtain active status for the Pine Creek Project.[9]

The Concerned Citizens of Southern Ohio, Inc. (CCSO). This organization was formed in early 1972 when major opposition to the project became apparent. Its membership, ironically, consists primarily of watershed landowners from the same lowland areas as SOIL's members. CCSO's members do not want to give up their homes and property for a watershed project in which most of them do not believe. The CCSO was able to form a strong and effective force of local opposition to the project and to the PCCD, which ultimately resulted in withdrawal of state and federal support in September, 1973. The two main objectives of the CCSO at the time it was formed were 1) to halt any further work on the Pine Creek Project and 2) to see the PCCD dissolved.

The Sierra Club and Rivers Unlimited are two well-known environmental organizations that gave support to CCSO via letter-writing campaigns and possibly financial support for the court suits filed by CCSO. Having these nationally recognized environmental interest groups speak out on behalf of the CCSO provided additional support in the effort to stop the project.

The Local Conflict—A Brief Account

The time-line sequence of events (Figure 1) suggests that very little if any opposition to the project was apparent prior to January/February, 1972. In the early months of 1972, local, state, and federal officials began to notice a definite deterioration of local support for the project. The Ohio Department of Natural Resources (ODNR) was flooded with letters from residents of the watershed area requesting information on the watershed project and the PCCD. This in itself might be an indication that the public was not well informed about the project from the beginning. At this time (early 1972), the project had been in the planning and implementation stages for about eight years. The residents of the watershed area should have been well informed about the project by 1972.

Further, area newspapers such as The Ironton Tribune, The Portsmouth Times, The Lima News, The Columbus Citizen-Journal, and The Cincinnati Post and Times carried many articles and letters that were in opposition to the project. The authors of these articles and letters cited a variety of reasons for opposing the project. Some of the major concerns included:

1. Homes are being taken away without full explanation or just compensation.

2. Those people on a fixed income cannot afford further taxation.

3. The people of the area have been kept in the dark about the project.

4. The project will benefit only a very few people, while all the residents within the watershed will be assessed to pay for the project.

5. There is a lack of need for the series of water impoundments designed for flood control.

6. The failure of the PCCD to conduct its affairs openly and to allow for reasonable public input from all segments of the community.

The 7300 landowners inside the watershed boundaries were notified on February 20, 1972, by the PCCD as to their individual shares of the cost of the watershed project. This served as a stimulus to the opponent's campaign to halt the project, especially if these assessments were brought on by surprise to some or many of the landowners.

In early 1972, the CCSO was formed and played an integral part in organizing the opposition to halt the project. The CCSO conducted public meetings, sought the support of various environmental groups, and formulated an effective letter-writing campaign to show local, state, and federal officials that local initiative and support for the project, primary prerequisites for a successful PL 566 project, were lacking.

The opposition campaign continued. On August 10, 1973, the Director of the ODNR, William Nye, contacted the PCCD to inform them that the State of Ohio had noticed deterioration of public support for the proposed work plan of the PCCD. Nye said the plan contained numerous aspects which had met with persistent and growing public opposition from local and statewide groups due to economic, social, and environmental concerns.

The letter from Nye also stated that the CCSO had submitted a report to the ODNR in February, 1973, which made various allegations and statements about the operation of the PCCD. At that time the ODNR had asked that the PCCD respond to these allegations by August 3, 1973. Nye said that if the PCCD failed to respond by this date, then the ODNR must conclude that the PCCD cannot respond, and therefore, the ODNR must consider withdrawing its support for the project.

As of August 10, 1973, the ODNR had not received a response from the PCCD. State support for the project was subsequently withdrawn. Shortly thereafter, on September 6, 1973, the PCCD was informed that further PL 566 federal funding for the project was being terminated due to lack of local support and the withdrawal of state support. The project was then put on an "inactive" status by the Soil Conservation Service. At this time only one of the eleven proposed flood detention structures had been completed.

The Southern Ohio Improvement League (SOIL) was then formed to bring the proponents of the project together in an effort to regain state and federal support. Letters were written to agencies at all levels to ask for reinstatement of the project. The proponents explained that there was a great need for flood protection, recreation, and economic growth in this area.

The ODNR's response to these letters of support was:

> . . . One of the key elements involved in a PL 566 watershed project, such as Pine Creek, is the degree of local support it receives. In recent months we have received numerous letters from both Lawrence and Scioto Counties regarding Pine Creek, the majority of them in opposition to the project. This lack of local support as indicated through meetings, letters, and other means, has prompted the State of Ohio to withdraw its support for the project.[10]

The ODNR and SCS remained convinced in the next few years that the necessary support for the project simply did not exist, even though there was some obvious support remaining. During this period (early 1970s), the well-known government scandal at the federal level was

FIGURE 1: SEQUENCE OF EVENTS OF THE PINE CREEK WATERSHED PROJECT

Official application by local sponsors to State Department of Natural Resources for project approval	May 1, 1964
Preliminary investigation by U.S. Department of Agriculture SCS completed	October, 1965
Planning approved by SCS	January 10, 1966
Pine Creek Conservancy District formed	Early 1966
Work plan approved by SCS.	July 19, 1968
Project authorized by SCS (PL 566 funds authorized).	August 27, 1969
Ground-breaking ceremonies for first dam and lake.	April 17, 1971
Ohio Department of Natural Resources notices deterioration of local support: Many letters to state and federal agencies Letters to local newspapers Letters to local and state representatives	January, 1972
The 7300 watershed landowners notified by the Pine Creek Conservancy District as to each landowner's share of the cost of the project	February 20, 1972
Concerned Citizens of Southern Ohio (CCSO— the primary opposing interest group) formed.	Early 1972
Opposition prepared and presented detailed report to Ohio Department of Natural Resources which included allegations against Pine Creek Conservancy District and other statements of opposition	February, 1973
Ohio Department of Natural Resources withdraws its support due to lack of local support	August 10, 1973
Soil Conservation Service withdraws its support and puts project on inactive status.	September 6, 1973
Southern Ohio Improvement League formed (SOIL— primary interest group of proponents).	September, 1973
Proponents of project institute letter-writing campaign to ask state and federal agencies for reinstatement	September, 1973
Pine Creek Conservancy District prods SCS to perform environmental impact assessment and pushes plans to obtain reinstatement	Late 1974 and Early 1975

Findings of the State of Ohio Attorney General's investigation of operation of Pine Creek Conservancy District made public and reprimanding letter sent to Conservancy District	September 15, 1975
The CCSO attempts to get Pine Creek Conservancy District dissolved.	October, 1975
Letter from Ohio Department of Natural Resources Director Teater to all Ohio Conservancy Districts concerning the increasing erosion of public confidence in governmental bodies at all levels—uses Pine Creek as an example	December 16, 1975
Court decision of CCSO vs. Pine Creek Conservancy District ruled against CCSO. Upheld constitutionality of Ohio Conservancy Act	September, 1976
Public meetings started up again by Pine Creek Conservancy District to gain local support, but with little response or interest.	March, 1977
Trustees of Decatur Township declare their official opposition to project.	April, 1977
Trustees of Elizabeth Township declare their official opposition to project.	April, 1977
Pine Creek Conservancy District applied to Ohio Department of Natural Resources for an additional loan	April 4, 1977
Loan application rejected by Department of Natural Resources on the basis that there has been no progress toward accomplishment of District goals.	April 21, 1977
CCSO loses major court battle—U.S. Supreme Court lets stand a lower court decision upholding Ohio's use of conservancy districts to handle water management.	June, 1978

taking place (the Watergate affair). This probably contributed to the increasing erosion of public confidence in governmental bodies at all levels.

It was also during this same time period (1972-1975) that the Attorney General of the State of Ohio conducted an investigation into the organization and conduct of business by the Pine Creek Conservancy District. This investigation was the result of numerous letters sent to the State Attorney General's office from citizens of Lawrence and Scioto Counties. The State Attorney General's office on September 15, 1975, submitted a letter to the Pine Creek Conservancy District in which the findings of this investigation were released.

To summarize its findings, the State Attorney General's office said:

> . . . . In short, we are most concerned for your District's general disregard for the open functioning of a governmental body, which is a cornerstone of our democratic form of government.[11]

It is suggested from these findings that the PCCD was not adhering to the law as set forth by the Ohio Conservancy Act. This further suggests that the unwillingness of the people to accept the project and the PCCD might well have been justified. The operational procedures of the PCCD, coupled with the Watergate scandal at the federal level, caused suspicion and distrust to develop in the residents of the watershed.

On December 16, 1975, Director Robert Teater of the ODNR sent a letter to all Ohio Conservancy Districts to bring their attention to Amended Substitute Senate Bill 74, which had recently become effective. This bill is the Sunshine Law, specifying and requiring, among other things, open public meetings. Teater stated in his letter:

> . . . . My experience is that a well-informed public is an essential element of a successful public works program. Those Conservancy Districts which encourage public participation are normally successful in obtaining public support.[12]

Director Teater's letter was possibly sparked by the recent findings of the State Attorney General in regard to the PCCD.

Current Status of the Project

From 1975 to 1977, the PCCD and SOIL continued to attempt to revive the project, drum up local support, and obtain reinstatement by the State of Ohio and the U.S.D.A. Soil Conservation Service. The ODNR holds that a clear indication of public support would now be required to merit any further consideration of a flood control program for Pine Creek.

Another obstacle which must be removed before any further action can be taken on the project is preparation of an environmental impact statement. Once inactive status was declared, the Soil Conservation Service said that it would not invest the time and money to perform the assessment until it was sure the project was to become active again. The SCS further stated that due to various threats and locally intense emotions concerning the project, it would not send its personnel to an area of such potential physical harm. Presently, no environmental impact statement has been prepared.

As of March, 1977, public meetings held by the PCCD started up again, but attendance has been low. According to Mrs. Beverly Childers, founder of SOIL and now a member of the PCCD, the project has been "dragged through the weeds" for so long that many people have put it aside as forgotten or doomed. Mrs. Childers also said that now the PCCD members are disputing among themselves on some of the current issues to be resolved.

Presently, all townships in the area of the watershed except one have, through their trustees, declared their official opposition to the project. At this time the project remains on inactive status. No further construction has taken place on the project since inactive status was declared in 1973.

Summary

The Soil Conservation Service in its preliminary investigation of the Pine Creek area showed that there existed a need for flood protection, water supply, and recreation. There was local support for the project, and the project was organized and authorized.

Those individuals opposing the project then formed an effective opposition in an attempt to halt the project for reasons previously stated.

The conflict resulted in state and federal withdrawal of support shortly after work had begun. Both sides believed so strongly in what they were fighting for that compromise was never considered. Alternatives to the proposed action or trade-offs between the proponents and opponents were not examined or even proposed.

It is suggested that the following probably contributed significantly to the Pine Creek conflict at the local level: 1) the public's general lack of knowledge about the project in the early stages of planning and implementation, 2) lack of public participation in the planning and implementation stages, 3) the right of government to acquire privately-owned property for a public project, 4) unwillingness (and/or inability) of many of the watershed residents to pay for the project, and 5) assessment of all watershed residents to pay for the project when only the bottomland residents will benefit.

The Pine Creek conflict suggests a situation in which the general public to be most affected by the flood control project is actually opposed to it. But the major opposition did not organize and become effective until three years after the project was authorized.

Research indicates that one of the primary reasons for this delay was that the public was uninformed about the project to begin with.

Some of the residents of the watershed were faced with government acquisition of their homes and property by means of the inherent government power of eminent domain. This power entitles the government (in this case, the Pine Creek Conservancy District) to acquire private lands in the public interest after justly compensating the landowner.

The Pine Creek residents resent and thoroughly oppose this type of government intervention into their personal lives. They regard their rights to private property ownership very highly.

The dominant political philosophy of the residents is conservative, Republican, and individualistic. Government interference is looked down upon, especially if it means encroaching upon one's personal property right—a right that walks hand-in-hand with the inalienable rights of life and liberty.[13]

Recommendations

If there is to be a watershed project for Pine Creek in the future, then much if not all of the planning will have to be reformulated. This is where many improvements can be made.

As of September, 1973 (ironically, the same time that the Pine Creek Project was declared inactive), a new system for planning water and related land resources projects was adopted by the U.S. Water Resources Council. These new planning criteria are entitled "Principles and Standards for Planning Water and Related Land Resources Projects."[14]

This "multiple-objective planning approach" differs from past resource planning in a number of significant ways. It systematically relates all aspects of water and related land resource planning to economic, social, regional and environmental considerations. Environmental concerns are for the first time placed on an equal basis with economic development. The planning procedure also requires a display of the effects of the plan on regional development and social well-being.[15]

Additionally, the public must be involved from the initial planning stages. Thus, issues and social values of importance to those most affected by the proposed project can be identified and specified early in the planning process through effective public input.

With public input through public meetings and hearings, a compromise may be reached, either to accept one of the proposed alternatives or a possible combination of two or more alternatives.

Hence, the following recommendations are made:

1. Allow a cooling-off period of from three to five years.

2. Then determine if the local support which is so essential to a successful PL 566 project is present. If not, terminate the project and any further planning.

3. If it is determined that there does exist the necessary local initiative and support, proceed with complete reformulation of plans using the multiple-objective planning approach.

4. Court dismissal of the present Pine Creek Conservancy District should take place immediately. If a new Conservancy District is formed due to a show of local support for the project, the new Conservancy District should include members from both sides of the controversy.

5. The new Pine Creek Conservancy District should be conducted in an open, public, and business-like manner and should strictly adhere to the law as set forth in the Ohio Conservancy Act.

6. Preparation of an environmental impact statement should precede any further planning. This environmental analysis should become an integral part of the planning process.

7. The public must participate in all phases of planning and be kept informed by:

   a. Public hearings and meetings.

   b. Sending information to all residents of the watershed and surrounding areas early in the planning stages concerning:

      1) Significance and purpose of a PL 566 project.

      2) The role and authority of the Pine Creek Conservancy District.

      3) What part the public can and should play in planning the project.

      4) What part of the cost the residents will be required to pay (as a whole and individually).

      5) Exactly which homes and property will be taken for the dams and lakes.

      6) A thorough explanation of the protection that the relocated residents will receive under the "Relocation Assistance and Real Property Acquisition Policies Act of 1970.

8. Include alternatives in the plan to:

   a. Take fewer homes and less private property.

b. Provide for a smaller project or a series of smaller projects that would cost less and take less private property.

c. Locate dams, reservoirs, and lakes in different places.

d. Include channel improvement only.

e. Implement floodplain zoning in areas most subject to flooding as opposed to a series of dams and lakes.

f. Take no action whatsoever.

In summary, it is suggested that the planners consider as an integral part of the planning process the values of the people who are to be affected by the project. Collection of an accurate array of facts should be carried out in relation to (and not to the exclusion of) the values of the residents who will pay for the project and be most affected by it.

Compromise and serious consideration of a variety of alternatives to meet the project objectives can lead to a project decision which is generally acceptable to the public and meets the project objectives in a workable manner.

FOOTNOTES

1. Interview with Arthur Woldorf. Ohio Department of Natural Resources Division of Water, Water Planning Unit. Columbus, OH, August 9, 1977.

2. Ohio Department of Natural Resources Division of Water, Water Planning Unit. File on Public Law 566, Pine Creek.

3. Ohio Department of Natural Resources Division of Water, Water Planning Unit. Watershed Planning Files.

4. Ohio Department of Natural Resources Division of Water, Water Planning Unit. Preliminary Investigatory Report on the Pine Creek Watershed Project. Prepared by SCS, 1965.

5. Ibid.

6. U.S. Department of Agriculture Soil Conservation Service Fact Sheet on the Pine Creek Watershed Project, May, 1971.

7. Ohio Department of Natural Resources Division of Water, Water Planning Unit. Preliminary Investigatory Report on the Pine Creek Watershed Project. Prepared by SCS, 1965.

8. Ohio Department of Natural Resources Division of Water, Water Planning Unit. Pine Creek Work Plan, 1968, updated 1974.

9. Interview with Beverly Childers, past President of Southern Ohio Improvement League. Pedro, OH, August 1, 1977.

10. Ohio Department of Natural Resources Division of Water, Water Planning Unit. File on Public Law 566 Projects, Pine Creek.

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AMENDMENT #1 — A CONSERVATION VICTORY

by Charles Davidson*

Thanks to a constitutional amendment providing general tax revenues for a comprehensive wildlife and forestry conservation program, Missouri has become the leading state in per capita spending for conservation. Remarkably, the amendment had its inception in an initiative petition. The program is also the first major effort in any state to include non-game wildlife and non-consumptive outdoor activities. How the long campaign was organized and carried out under the leadership of the Conservation Federation of Missouri is a textbook example of environmental education in action on the hustings.

Missouri, by passing Amendment #1 on November 2, 1976, became the first state in the country to earmark a percent of a general revenue tax source to be used exclusively for wildlife and forestry conservation and for no other purpose. It also marked the first legitimate effort to fund a total wildlife and forestry conservation program including non-game wildlife and non-consumptive outdoor activities.

In a nutshell, Amendment #1, which passed 901,500 to 873,400, earmarks an additional one-eighth of 1 percent sales tax exclusively for the "bird, fish, game, forestry and wildlife resources of the state." The amendment took effect July 1, 1977.

According to Missouri Secretary of State James Kirkpatrick, the amendment is only the tenth of 41 constitutional amendments proposed by initiative petition to be adopted since 1910. It is the first such amendment approved to change the 1945 Missouri Constitution. In a release following the election, Kirkpatrick noted the total vote on Constitutional Amendment #1 was the highest ever cast on a Constitutional change. It also drew the greatest percentage of the vote for candidates (91 percent) of any amendment submitted at a general election.

The amendment needed only a simple majority for approval and the victory can be attributed to strong support from Kansas City and St. Louis and several other major metropolitan centers. Outstate, however, the amendment carried in only 26 of Missouri's 114 counties.

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*Mr. Davidson is Administrative Assistant, Conservation Federation of Missouri, Jefferson City 65101, and is Editor of Missouri Wildlife. A graduate of Southwest Missouri State University (B.S. in Conservation Education), he previously served as Information Specialist for Oregon Fish Commission and Outstate Field Representative, Nebraska Game and Parks Commission.

With the implementation of Amendment #1, Missouri leads the nation in per capita spending for conservation. In its first year the tax was projected to raise between $22 and $25 million, making a total of $40 to $41 million available for wildlife and forestry conservation programs in the Sho-Me State.

Although many people became involved in both the petition drive, which successfully brought the amendment up for a vote, and the subsequent election campaign, the Conservation Federation of Missouri can be singled out as the key to the victory. They furnished the leadership, petition drive and campaign facilities, and staff personnel. However, it was a total effort under the banner of the Citizens Committee for Conservation and there were many groups not affiliated with the Federation which endorsed and supported the effort.

The Executive Director of the Conservation Federation of Missouri served as the Committee's Executive Secretary and Chief Campaign Manager, while Federation Past-President Ted Scott served as Chairman and Federation 2nd Vice-President Abe Phillips served as Vice-Chairman. The Federation's staff of four worked full-time on the petition drive and election campaign. Mrs. Doris Keefe, a volunteer, also served full-time during the entire campaign, coordinating the petition mailings, checking the petitions, putting them in final form and conducting other activities. Many wives of Missouri Department of Conservation employees and many employees on their time-off contributed greatly to the effort. Yeoman service was performed by Federation 1st Vice-President Sy Seidler, who coordinated the petition drive effort in St. Louis and by Federation members Bill Haman and Bob and Ester Woodward, who coordinated the petition drive efforts in Kansas City.

The history of Amendment #1 began back in 1969. Following several preliminary meetings between the Department and interested conservation lay leaders as to the direction Missouri conservation should take in the future, three nationally known conservationists and resource experts, Dr. A. Starker Leopold of the University of California, Irving K. Fox of the University of Wisconsin, and Charles H. Callison of The National Audubon Society were called on to evaluate the programs of the Department of Conservation. Their study resulted in the Missouri Conservation Program Report (MCPR). In summary, they recommended a broadening of the existing program by adding conservation programs for non-game wildlife, and management for outdoor recreation outside the traditional realm of hunting and fishing, while at the same time increasing hunting and fishing areas and opportunities.

They suggested that to accomplish this objective would require a source of funds beyond hunting and fishing permit fees. With the idea that somewhere funding could be found, the Department developed a long-range plan to provide a more thorough and effective conservation program. This plan was called Design for Conservation.

Two analyses of revenue sources were then undertaken—one by a private consultant and a follow-up by the University of Missouri. The studies analyzed different sources of funds—from severance and soft drink taxes to bond issues and user fees.

Initiated by the Conservation Federation, a special committee, the Citizens Committee for Conservation formed to achieve funding for the Design for Conservation. After considerable study the Committee launched a petition drive in 1971. The petition called for a constitutional amendment to tax soft drinks at the rate of one cent per bottle/can, with the money earmarked for use by the Department of Conservation. Enough Missourians signed the petitions to put the issue on the general election ballot in 1972, but the amendment was not certified for the ballot because of legal technicalities. The proposed Constitutional Amendment which appeared on the petitions lacked an "enacting clause," and ultimately the Missouri Supreme Court ruled the petitions invalid. The Committee was quite sharply criticized for singling out one industry and it was reported the soft drink bottlers had millions of dollars committed to conduct a media campaign against the proposal.

The next two years, 1973 and 1974, were spent planning a new effort and fighting, in the Legislature and in the Courts, attempts to cripple the initiative petition process. Passage of a statewide registration law also slowed the kick-off of a second effort since in some areas of the state a very high percentage of voters were not registered immediately following passage of this legislation. Finally, in 1975, the Citizens Committee for Conservation began a new initiative petition campaign. The new effort called for an addition to the state sales tax of one-eighth of 1 percent (Missouri presently has a 3 percent sales tax), again to be earmarked solely for conservation purposes (to be used to carry out an updated version of the Design for Conservation). After many months of hard work, over 200,000 signatures were collected and the issue was certified to appear on the 1976 General Election ballot as Amendment #1. On November 2, 1976, Missourians narrowly approved Amendment #1 by 50.8 percent to 49.2 percent, culminating five years of hard work.

No project of this size is easy. The road to success was a veritable minefield, requiring many tough decisions over the years. Here are some things other groups should consider:

Leadership

The backbone of the project was the well-established Conservation Federation. The executive director, Ed Stegner, devoted himself full time to the project. He had full backing to do so from his Board of Directors. He also had, and needed, the resources of his office—a full-time assistant during the entire effort, an additional assistant the final nine months, two full-time office workers plus one volunteer who worked five days (and many nights) a week. The office staff was supplemented by volunteer women who worked practically every day in the last year.

Such a project would not be feasible without a knowledgeable person willing and able to work on it full time. An office and staff are also necessary, along with several telephone lines.

Legal Help

Our first effort failed because of a technical error in the wording of the proposed constitutional amendment. There are many attorneys with an interest in conservation and the outdoors. Their services can be donated, but they should be the sharpest you can find, and they should be serious about what they are doing. You can imagine what a terrific setback it is to do all of your work, then see it come to naught because of a small legal error—as happened to us in 1972. This could be a terminal blow to the morale of your workers. We were lucky to recover and step into the ring again. SUGGESTION: Give one attorney the final responsibility for accuracy in your petition.

Petition Drive

Missouri requires a minimum of about 100,000 signatures to put an amendment on the ballot. We had to have 8 percent of the number who last voted for Governor in two-thirds (seven) of the state's ten congressional districts. Petition signers must be registered voters. Because of distribution the CCC needed a total of 150,000 signatures. An insurance margin was needed on top of this since many of the signatures would be discounted by the Secretary of State. Many people seem to think they are registered, but are not. Also, some people move and the county clerk no longer carries them on his voter rolls. Ultimately, we collected over 200,000 names and that wasn't too many. A warning here: No tampering with signatures. Your signatures must be 100 percent clean, and everyone involved with the drive must understand that. In Missouri it is a felony to falsify a petition. Also, the entire effort may be jeopardized if tampering or falsification is proved.

Collecting 200,000 signatures is a heck of a lot of work. The CCC had a statewide organization with a coordinator in each of 114 counties. The coordinator was responsible for collecting his county's quota of signatures. He got them by rounding up volunteers and placing them in shopping centers, fairs, college campuses, and anywhere people gather. In some cases (especially St. Louis and Kansas City) the coordinator devoted nearly every Saturday and several week nights for several months.

Money

This is, of course, the key to the entire campaign—from the start of the petition drive up to election day. You need to pay for travel expenses, telephone bills, printing, mailing and salaries, but the largest sums should be spent for advertising just prior to the election. The Missouri CCC ultimately raised $125,000 and committed about $65,000 to television and radio advertising. Newspaper advertising was left largely to local committees.

Where the Money Came From

Most of the money came from sustaining members of the Conservation Federation and mailings to lists of known conservation-minded folks (over 300,000) which asked for donations of whatever they could afford to send. Most mail contributions were small, but they added up. Keep in mind, though, that mail expenses were very high. Contributors were offered wildlife art prints for minimum donations ($25 and $50). This was an immense help. The prints were donated for limited reproduction by Missouri wildlife artist Charles W. Schwartz. We even found a printer who donated the press time and paper stock for some of the prints. A little money came from corporations that either liked the idea, or were in the outdoor or forest products business. And, a repeat mailing to previous donors was very successful. Besides the statewide money raising effort, money was raised locally and used to buy local advertising. Many of the Federation's affiliated clubs contributed sizeable amounts toward the effort. We had hoped for large contributions from corporations, but got only a few. A paid consultant and a volunteer with fund-raising experience tried, but never really breached the corporate bank vaults.

Volunteers

You need lots of them, and not just for the petition drive. We established (in some cases tried to establish) county organizations to take care of informing the voters about our proposal on a more personal basis than by mass advertising. In addition to Federation members one very important source of volunteers for the CCC was our Conservation Department. Some Department employees gave many of their off-hours to the effort. We had much better participation from citizen volunteers in those areas of the state where the Department people were most active. Also, most of the CCC's volunteer office help came from wives of Department employees. Thousands upon thousands of brochures and hand-out cards were distributed at football games and in shopping centers. Youth groups were also quite active in passing out literature.

Endorsements

The CCC sought and got endorsements from many state and national conservation groups and others, from the National Audubon Society and National Rifle Association to the United Auto Workers and the American Association of University Women. Some others included: the National Wildlife Federation, the Izaak Walton League, the Sport Fishing Institute, Wilderness Society, American Forestry Association, U.S. Forest Service, Wildlife Management Institute, and more. Among others, endorsements were also received from Stuart Udall, Nat Reed, Tom Kimball, and Marlin Perkins. We feel that editorial endorsements are particularly important and should be actively sought. Try to contact editors, publishers, and news directors personally, before the opposition does. Make sure they thoroughly understand both the pro and con aspects of your program, and let the merits of the proposal be their own selling points.

Opposition

You might expect opposition from any quarter. Our opposition came from newspapers (considerable), politicians, landowner groups, an animal protective organization, and some members of the business community. A business lobbying organization produced a paper attacking some aspects of our funding method and got a lot of publicity from the media—especially newspapers. Some editors used this as a basis for their editorials. The politicians were opposed to the earmarking of the tax money. The landowners were mainly afraid of the Department's right of eminent domain. The animal protective group opposed the Amendment because the Department would not outlaw the use of steel leg-hold traps. Finally, some business people were opposed because they were afraid computation of the fractional tax would be difficult. We issued many news releases countering these arguments.

Decisions

The CCC had a state chairman and a steering committee. These people spent many Saturdays wrangling over campaign problems. They made major decisions, but relied on Ed Stegner and the Conservation Federation to carry out their plans.

Any steering committee must realize that they are the main driving force; that volunteers are only as good as their leaders. One more thing: a committee, by its very nature, can't make decisions as easily as one person. Any campaign needs a take-charge individual.

Media Campaign

The CCC interviewed several campaign firms, then selected one of them. This firm was supposed to advise and help us conduct our campaign, conduct research throughout the state to find out where our strengths and weaknesses were, and also to assist as a fund raiser. They were to, in effect, raise money to both pay for media costs, and pay for their own services. It finally became painfully obvious that they were not performing adequately, nor were they raising enough money to even cover the cost of their own services. Their contract, into which had fortunately been inserted a clause stating that they would not be paid any more than they themselves were able to generate, was terminated. The CCC ended up raising their own money, producing their own ads (print, radio and TV), and in general, going it entirely on their own. Another advertising agency did help in placing radio and TV ads throughout the state for the commissions received. The Department of Conservation was urged to use every means available to inform Missourians about the conservation proposal, Design for Conservation.

They utilized the following:

A feature length film entitled Design for Conservation;
Special editions of The Missouri Conservationist, plus many articles;
News releases;
Radio and television programs;
Exhibits;
Speeches distributed to all Department personnel;
Special publications.

The CCC used the following:

News releases;
Paid newspaper, radio and television ads;
Personal letters to voters urging them to vote yes and explaining the program (about 100,000 of these letters were written by volunteers);
A speaker's bureau;
Exhibits and signs;
Posters, brochures and the usual array of campaign materials;
Personal appearances on radio and television programs;
Personal contacts with media people;
Speaking tours throughout the state;
Telephoning prospective voters.

There were several keys to the win for Amendment #1 and the Federation is proud to have played such an important part in this victory. The 900,000 Missourians who voted with us are, of course, the real key. They saw that we had a good conservation program in Missouri, but that here was a chance to make it better—for now and the future. They saw that what we were saying was not just campaign rhetoric. They placed a tax upon themselves despite many false charges leveled against us, despite total farm organization opposition and despite politicians railing against taxes and promising tax cuts. They did it to preserve a heritage of conservation in Missouri.

More than anything else, we hope other states will find promise in our victory and perhaps find their own ways to improve funding for wildlife and forestry conservation in their own states.

THE AMES MUNICIPAL AIRPORT EXPANSION PROJECT

by Frederick P. DeLuca*

If anything has characterized environmentalism, it is the rise of "concerned citizen" groups virtually out of nowhere, like spontaneous combustion, to oppose what hitherto had been American manifest destiny, like the expansion of a municipal airport. In this perceptive case study from Ames, Iowa, we see all the characters in such a confrontation delineated in living color. The author feels the influence of a chamber of commerce may be insurmountable, but he predicts concerned citizens will continue to oppose airport expansion "by all possible means." Like dumping tea into Boston harbor?

In May 1972 the City of Ames, Iowa, proposed a plan for expansion of the Ames Municipal Airport.[1] Residents in close proximity to runway approaches and traffic patterns believed that the proposed airport expansion would reduce the quality of the environment in the residential areas. A major concern was the addition of aircraft noise to residential areas in which many residents felt the noise level was already excessive. Examination of the City's Preliminary Environmental Impact Study[2] indicated the study was superficial and insufficient to justify many of the City's conclusions in support of the project. A small group of Concerned Citizens, with assistance from some members of the Ames Conservation Council, were successful in having the project abandoned until an indepth study by an outside consultant could be conducted.[3]

The purpose of this report is to summarize the problems and interactions between the group of Concerned Citizens, and local, state, and federal agencies, and to list the lessons that were learned as a result of those interactions. The rationale is that students of environmental studies will be able to draw upon this report to develop a better understanding of the problems encountered, and procedures used by a group of Concerned Citizens to protect the quality of their environment.

Background of the Project

The expression, "You may as well be in Ames, Iowa," has been used in a movie, newspapers, magazines, and on national television to connote a small town, isolated in time and space. Although Ames is surrounded

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*Dr. DeLuca is Associate Professor of Earth Sciences and Science Education at Iowa State University, Ames, Iowa 50011, and was actively involved in the early developmental stages of the University's Environmental Studies Program.

by agricultural land, and granted it is not a metropolitan complex, it is much more than a stop at the crossroads. Ames is located 30 miles north of Des Moines and has a population of about 25,000 year-round residents, plus an influx of 23,000 Iowa State University students during the academic year. The Hilton Cultural Center which is managed by Iowa State University has received national and international acclaim, as has the City's solid waste recycling plant which is said to be the first of its kind. Major employers in the City are Iowa State University, Hach Chemical, Bourns Electronics, Sundstrand Transmission, 3-M Company, Iowa Department of Transportation, and the National Animal Disease Laboratory. Communications media in the City include a television station, four radio stations, and one daily newspaper.

The Ames Municipal Airport is located 1-3/4 miles south of Main Street. It consists of a 3500-foot northwest-southeast paved runway, a 3300-foot northeast-southwest turf runway, paved ramp and taxiways, administration building, 8 hangars, 2 aircraft repair and maintenance buildings, and 2 storage buildings. The airport is classified as a Basis Utility (Stage II) type airport, which means that it can accommodate about 95 percent of the general aviation fleet under 12,500 pounds (primarily small single engine aircraft). About 73 aircraft were based at the airport in 1972.

Proposed Airport Expansion

Plans for airport expansion centered on the construction of a 4900-foot northeast-southwest runway which would be capable of handling dual engine aircraft up to 60,000 pounds gross weight. The proposed runway would include standard clear zones from the ends of the paved portion and would be equipped with all necessary landing lights, runway end identification lights, a visual approach slope indicator, and all required markings for visual and instrument landings. One option concerning the acquisition of land proposed that additional land be acquired and reserved for future extension of the proposed 4900-foot runway to 6000 feet.[1]

Reasons for the Proposed Expansion

The City provided two major reasons for the proposed expansion: 1) business aircraft associated with possible growth of small to medium-sized industry needed expanded facilities, and 2) the addition of the new runway would provide an extra margin of safety for larger aircraft. It was also noted that larger aircraft that were using the paved runway were doing so at some risk to their own safety as well as to the detriment of the runway, taxiways and ramps which were not designed to carry such heavy aircraft.

Concerned Citizens

The public meeting concerning the proposed Airport Expansion Plan was scarcely more than the legal requirement for such announcements in a local newspaper. It was quite by chance that a half-dozen

people from the impacted area attended the scheduled meeting. They learned that the new runway in its final stage would be almost twice as long as the old runway, allowable aircraft weigh would increase by a factor of 5, and in 20 years air traffic would increase between 4 and 5 times its 1972 level. On the one hand plans called for a major expansion of facilities and aircraft traffic, but on the other hand proponents claimed that noise levels would decrease in some areas and not increase substantially in other areas. Residents from the impacted area were extremely skeptical of such reasoning and questioned how a major expansion project could result in decreased noise or only very little increases in noise. They reasoned that their residential areas were already subjected to excessive noise and airport expansion would inevitably add to the noise level. Their concern led to the formation of a loosely knit group of Concerned Citizens to learn more about the proposed expansion.

The Concerned Citizens never established membership criteria nor were there any committees, dues, or even a formal meeting. Communication between interested individuals was primarily by telephone and occasionally a few individuals met to discuss problems and swap information. The division of labor came about rather fortuitously. As a need for certain types of information were identified, those individuals who were best qualified either volunteered or simply moved ahead to obtain the desired information and subsequently shared it with others.

At first the Concerned Citizens looked for information that would allay their fears by telling them that their initial impressions about increased aircraft noise were wrong. Unfortunately, new information only confirmed their initial impressions. A rebuttal to the City's Preliminary Environmental Impact Statement cited 26 failures and/or incorrect statements, and charged the City with failure to satisfy the intent and purpose of an environmental impact statement as required by law.[4] Some of the most important omissions were: 1) failure to consider noise from low-flying aircraft in traffic patterns away from runways, over residential areas, 2) failure to consider noise from continued use of the old runway, and 3) failure to give adequate consideration to other alternatives to airport expansion. An example of an incorrect and misleading statement follows. "The glide path of the present paved runway is over a residential area and school on one end and over dormitories and residential areas on the other. The proposed runway's glide path would eliminate approaches over these areas."[5] The first sentence was true, but the second sentence was incorrect because the old runway would continue to be used and as usage of the airport increased, traffic on that runway would also be expected to increase.

The critical question about maximum size of aircraft that would use the proposed runway was not answered. The 12,500-pound load capacity of the paved runway was being exceeded by a factor of 2 or more by heavier aircraft. It appeared that if the proposed runway was built to accommodate 60,000-pound aircraft as planned, and its load capacity was also exceeded, then much heavier and noisier aircraft would use the runway.

Armed with new information, the Concerned Citizens concentrated on educating the members of the City Council. The rationale was that the members of the City Council did not understand the problems because they had not been provided with sufficient information. New information and signed petitions calling for an indepth study were presented to them, but their votes continued to support advancement of the proposed project. It appeared that an unofficial decision in favor of airport expansion had been made prior to publication of the plans for expansion, and City officials were merely going through the motions of giving it their formal approval.

Although two City Council members provided Concerned Citizens with behind-the-scenes information, the majority of the Council members were sufficiently aligned with the Ames Chamber of Commerce to make the prospect of airport expansion appear inevitable. Communications with the Federal Aviation Administration (FAA) and Environmental Protection Agency (EPA) at both their Washington D.C. and Kansas City offices proved fruitless, as did communication with the Iowa Department of Environmental Quality. Finally, in the last hour, more than 700 signatures in support of a referendum were presented to the City Council. The Iowa Code required that the expansion project be put to the vote of the people or be abandoned. The project was abandoned on September 18, 1973. In February, 1978, the Wainwright Engineering Company of Montgomery, Alabama, was hired to do an indepth study of the Ames Municipal Airport.[6]

Lessons Learned

1. Citizens have too much faith in the desire and ability of local, state, and federal governments to protect the environment.

   One of the main barriers to developing awareness and taking action against the proposed project was the high confidence that citizens had in government agencies. They couldn't believe that the local, state, and federal governments would approve of any project that would disrupt the integrity of residential areas.

   There was one incident that helped to shock some people out of their complacency. Residents in an area near a new elementary school met with the airport manager to discuss aircraft traffic over their neighborhood. Their main complaint was that aircraft were flying illegally low over the school and homes. The airport manager reported that such flights were legal according to an FAA rule which permitted aircraft to be as low as 500 feet when taking off over the residential area. That finding did much to destroy confidence in the FAA and City government as agencies that would protect the tranquility of a residential area. In general, as citizens' contacts with government increased, their confidence in government decreased.

2. Local politics make comprehensive land use planning very difficult, if not impossible.

The original Airport Layout Plan for expansion was approved by the FAA in November, 1964.[1] At that time most of the land near the airport was zoned "non-residential" and steps should have been taken to insure that land use remained "non-residential." City records, however, show the history of the area was influenced by a series of rezonings and approvals for residential subdivisions. Although this fact was called to the attention of the City Council in 1973, residential subdivisions are being developed within one-half mile of the airport and directly under one runway approach zone and adjacent to another runway approach zone. Additional residential development is taking place within one mile to the east and west of the airport. It appears expansion of the airport and rezoning of land has been influenced more by local politics than by concern for a comprehensive land use plan for the region.

3. FAA has conflicting roles of promotion and control.

On the one hand FAA promotes aviation by providing federal funds and on the other hand controls aviation by passing judgment on site location and facilities. It has been shown that a single agency cannot do justice to both roles. The role of promotion usually dominates over the role of control and safety. The Atomic Energy Commission, until the creation of the Nuclear Regulatory Commission, was a case in point.

Official FAA policy supports either airport expansion or relocation, whichever plan is approved by FAA. In practice it appears that a shortage of funds and the desire to maximize promotion of aviation leads to an FAA funding policy that encourages airport expansion and discourages airport relocation. Airport expansion in a growing community is often a shortrun solution because a growing community soon overruns the airport, facilities become inadequate, complaints by pilots and residents mount, and relocation is eventually carried out at greater expense. The history of airports in many U.S. cities indicates that failure to make long-range plans have often resulted in relocation at a much higher cost. It must be said, however, that FAA is not alone in its shortrun view, local governments often support expansion simply because it is more expedient in terms of local politics.

4. Local, state, and federal laws are inadequate to protect residential areas from airport expansion.

Contrary to the title of the agency, the Environmental Protection Agency (in 1973) could not protect the residential areas from encroachment of an expanding airport because it lacked legal authority. Communication with the EPA office in Kansas City indicated that they could only review and comment on the environmental impact statement. They did not have any legal authority to dictate to FAA or the City of Ames. A similar response was received from the Iowa Department of Environmental Quality.

Public Law 91-190, Section 102(2) (c) guarantees the citizen's right to know, comment, question, and receive answers to his questions. The City of Ames and FAA have legal obligations to gather data, publicize data and clarify data for all interested persons. There are no laws, however, that state that a decision must be based on that data. Decisions can be made on strictly political considerations, without regard for even the best collection of data.

For example, the Concerned Citizens felt that the Ames City Council was ignoring the data, so they made the political move of calling for a referendum on the question of airport expansion. The Ames City Council did not want to risk a loss at the polls so they countered with a political move in voting to abandon the project. In the absence of environmental standards and laws, the airport issue was decided on the basis of politics.

5. Don't depend on the proponents of the proposed project to provide all important information.

The Airport Expansion Plan was strongly supported by the Ames Chamber of Commerce and the city manager who was a board member of the Ames Chamber of Commerce. Although the proposal came from the City of Ames, the information in the proposal and the accompanying environmental impact statement stressed the positive aspects while glossing over the negative aspects of the project. The Concerned Citizens had to fill in the critical omissions and correct erroneous statements, in order to develop a more accurate understanding of the project. Money for hiring experts was not available, but laymen with the ability to locate and synthesize information were rather effective.

Several methods were used to obtain information. Telephone calls worked well for collecting general information, although letters from various agencies were valued more because they served as evidence in support of specific views. A search of the related literature also proved helpful in locating many key publications. For example, the problems associated with airport expansion in different communities are usually similar. One publication provided an excellent guide to the factors and type of data that should be considered when planning an airport or airport expansion.[7] Use of that publication served as the basis for an indepth rebuttal to the City's environmental impact statement.

6. A small group of loosely knit citizens, working with out-of-pocket money can be successful in the shortrun, but in the long run the "cards are stacked" in favor of the Chamber of Commerce.

The Ames Chamber of Commerce is well organized and financed for the purpose of promoting growth. They exert tremendous influence on City government by vigorously supporting their candidates for City Council and cultivating friendships with City officials. Until recently the city manager's membership dues to the Chamber of Commerce were paid by the City. The city manager, by virtue

of his control over city employees, can influence the attitude and decisions of his employees and control the kinds of information that are passed on to the Zoning Board and City Council. The Ames Daily Tribune is in large part dependent on the business community for its financial support and therefore has much in common with the Chamber of Commerce on issues relating to growth. A series of clippings from the Ames Daily Tribune over the past five years confirms their admittedly strong support for airport expansion,[8] as well as their failure to keep the public informed concerning negative aspects of airport expansion. The web of factors that control information and decisions in city government are much more extensive and complex than summarized here, and it is unlikely that small groups of citizens can prevent growth from reaching cancerous proportions in the longrun.

Current Status of the Ames Municipal Airport

The Wainwright Engineering Company is now conducting an indepth study of the airport and its needs for the next 20 years. The information gathered will be publicized and made available to the citizens of Ames for discussion and their consideration. The Mayor has appointed a Citizens Committee to study the information, obtain feedback from the citizens, and select one of four alternatives: 1) do nothing, 2) expand the facility, 3) relocate within 15 minutes from downtown, and 4) relocate within 30 minutes from downtown.

On the surface, the decision-making process appears very reasonable. However, there are some problems. Four of the six members on the Citizens Committee are pilots. Another factor is that the Iowa Code has been changed to give the City Council exclusive authority to rule on the question of airport expansion. Although most city projects such as a new fire station, school or city hall must receive the approval of 60 percent of those voting, no referendum is required for airport expansion regardless of how much it costs.

The Concerned Citizens are taking a wait-and-see attitude. There is a possibility that the Chamber of Commerce will support relocation of the airport. If that occurs, the Concerned Citizens would gladly join forces with them. On the other hand, if the data do not guarantee the integrity of the residential areas, the Concerned Citizens are prepared to oppose airport expansion by all possible means.

FOOTNOTES

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2. City of Ames. Preliminary Environmental Impact Study for the Ames Municipal Airport Project. Ames, IA, May 18, 1972.

3. Editorial. Ames Daily Tribune, 4 (September 19, 1973).

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GOVERNOR'S COMMISSION ON ARIZONA ENVIRONMENT

by Roy P. Drachman*

It's sometimes hard to tell how much public involvement in environmental policy formation is window-dressing, and how much is solid stuff. The Governor's Commission on Arizona Environment is a case in point. If you have visited Phoenix or Tucson recently, you might wonder whether anybody in Arizona were concerned about air pollution from copper smelting operations or about ubiquitous air conditioners and irrigation systems "mining" ground-water aquifers, but this report suggests there are people in Arizona with an ecological conscience applied to environmental issues.

This unique Commission has been in operation since the White House Conference on Natural Beauty in 1965. Composed entirely of volunteers who pay their own expenses, it meets at diverse locations throughout the state to tackle environmental problems. All of Arizona's environmental legislation of the past 13 years is directly or indirectly a result of the Commission.

Many states have written to ascertain "how it works," but have not been able to organize anything like it.

Because it is a non-partisan group presenting both sides of all environmental problems, it "has the ear" of the Governor. Thus, it is able to be of real service to the state.

Following the White House Conference on Natural Beauty in May, 1965, Governor Samuel P. Goddard called for a Governor's Conference on Arizona Beauty in August, 1965. Arizona was the first state to hold a conference of this type.

State and national experts met with concerned citizens to discuss ways and means of protecting our natural and man-made heritage. Lewis J. Ruskin, Conference Chairman, made these recommendations to the Governor following the two-day conference:

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*Mr. Drachman was the first Chairman of the Governor's Commission on Arizona Environment when it was formed in 1965 and is now chairman again. He is well-known for his environmental orientation in his work in real estate development. He is a member of the Society of Industrial Realtors and is a Past President of the American Society of Real Estate Counselors. He has served on the Board of Directors of the American Chapter of the International Federation of Real Estate Boards and was Vice President of the National Association of Real Estate Boards. He is the Past President and a Trustee of the Urban Land Institute.

1. Wire President and Mrs. Johnson that Arizona endorses the concept of encouragement of maintaining natural beauty. Send copies to the Congressional Delegation;

2. Conference goes on record as endorsing national billboard and junkyard control;

3. Establish an Annual Governor's Conference on Statewide Beauty and an advisory committee be set up to organize it.

Further statements to the Governor were made under the following headings:

I. Beautification Beyond the Right-of-Way—There should be adequate highway rights-of-way with control of outdoor advertising, junkyards, and electric power lines.

II. Townscape—Long-range planning and good design.

IIIA. Air and Water Pollution—Control of air and water pollution.

IIIB. Progress in Utility Beautification—Encouragement for underground utilities.

IV. Beautification of the Right-of-Way—Good landscaping practices.

V. Ruralscape—A state wilderness act should be passed for the protection of wildlife and points of natural interest. Intensify laws relating to protection of plants, wildlife and antiquities. Immediate recognition for need to half destruction or removal of historic and prehistoric structures, objects, etc. Make the best use of public lands.

VI. Citizen Participation and Action—Instill individual and group pride for beautification. Concern for community appearance, taught to all, beginning with school children. Set up and continue to participate in community action groups catering to the need of all ethnic groups and income levels. Recommend a full time paid director with a permanent advisory council on beauty.

There was much enthusiasm and this led to the creation of the Governor's Commission on Arizona Beauty by Executive Order on November 24, 1965. There were 30 members appointed by the Governor and a Professional Advisory Committee with 22 members composed of representatives of governmental agencies and professional and business groups. Roy Drachman was appointed Chairman by the Governor.

The Commission adopted as its objectives: "To promote clean, attractive, well-designed communities, beautiful highways, parks, shorelines, historic sites and structures through a continuing statewide program of public education and action among citizens, governmental groups and other organizations. To also protect and encourage awareness of Arizona's abundant natural beauty."

Governor Jack Williams changed the name to Advisory Commission on Arizona Environment and Governor Raul Castro to Governor's Commission on Arizona Environment. Roy Drachman, Tucson real estate developer, continued as chairman for two years, at which time F. J. "Mac" MacDonald, a Phoenix landscape architect, became Chairman, continuing through a part of 1976.

Originally, the Commission was a "two-layered" organization, consisting of the Commission proper with 31 voting members, plus a Professional Advisory Committee of 18 governmental persons who were non-voting. Presently, the Commission consists of one large body (including governmental voting members), totaling 153 persons (1976).

The Commission serves under each Governor's Executive Order, and each order has been generally based on the preceding one. The order in all cases has been very broad, permitting a great deal of latitude for the Commission, especially with respect to organization. In each Executive Order, the Governor has reserved the right to designate the Chairman and Vice Chairman. Organizational decisions, i.e., need for, formation and structure of committees, the selection of committee chairmen, make-up of the Executive Board, etc., are left to the Commission's discretion. The Executive Board, at least in recent times, is made up of the Commission Chairman and Vice Chairmen and the committee chairmen (but not sub-committee and ad hoc committee chairmen), along with a representative of state government and federal government.

The Commission does not and never has recruited members. Any organization wishing a representative on the Commission must request this in a letter to the Chairman; the request is first sent to the Membership Screening Committee for its comments, and the Commission office then forwards the Commission's recommendation "to appoint or not to appoint" to the Governor, who makes the final determination. Once a "slot" is established for an organization and its first representative is appointed, that organization pretty much determines the specific person who will represent it as the slot is vacated for one reason or another; however, the Commission does exert some control by urging that the representative be the head of the organization or a high-ranking officer. In addition, the Governor sometimes directly initiates appointments. In either case, all members (then and now) are appointed by the Governor and serve at his pleasure.

Since the first Governor's Conference on Arizona Beauty in 1965 and starting with the formation of the Commission, legislation has been of prime importance to the membership. Some of the legislation promoted by the Commission and passed by the State Legislature is as follows:

1967—SB 1	Air Pollution Control. This was the first of many air pollution control bills passed, which include SB 98, 1969; SB 1, 1970; and SB 8, 1971. This has been a concern of the Commission since the recommendation in 1966.
1968—SB 70	Underground Utility Feasibility. A recommendation from the Governor's Conference on Arizona Beauty. Pursued by the Commission.

1970—HB 195 Billboard Control. Sought by the public for 16 years and by the Commission for five.

1972—HB 2012 Billboard Control. Brought Arizona statutes into compliance with the Federal Highway Beautification Act of 1965. Important to received federal funds. Recommendation from Governor's Conference on Arizona Beauty.

1972—HB 2001
1974—HB 2319 Emission Control. Related to air pollution problems. The Commission has continued to support this concept and promoted publicly the defeat of the referendum to repeal this law.

1971—HB 151
1975—HB 1104 Junkyard Control. Acquisition or relocation of both junkyards and billboards. Recommendation from the Governor's Conference on Arizona Beauty and later Commission activity.

1975—SB 1011 Solar Energy Tax Deduction.

1975—SB 1184 Public Dumping Grounds. Counties and towns may prescribe fees for use.

1975—SB 1286 Abandoned Motor Vehicles. Recommended in 1971.

1976—SB 1224 Establishment of Parkways or Historical or Scenic Roadways. One of the first recommendations to come from the Commission in 1966.

1976—SB 1062 Mining Claim Location. Recommended in 1974.

1976—HB 2018 Solar Energy Research Commission Appropriation. Recommended by the Commission in 1974.

The National Air Pollution Bill was also heavily supported by the Commission beginning in 1970.

In addition to legislation, where only those bills and concepts thoroughly researched (both pros and cons) were supported, the Commission has been involved in many special projects and has toured many parts of the state. Some of those are as follows.

Among the first positive steps of the Commission (1966) was support of HR 4671 which authorized the Central Arizona Project. In 1967 the Commission organized Arbor Day programs throughout the state in connection with the State Department of Public Instruction. The goal was to plant 100,000 trees.

A statewide litter control program was initiated by the Commission in 1967. "Arizona Will" cartoons were used to advertise this promotion. In order to publicize the Commission, a nationally known Arizona cartoonist, Walt Ditzen, created a cartoon character, and a contest was held to choose a name. A Tucson girl won from 2,000 suggested names, and "Arizona Will" became the official symbol of the Commission.

The second Governor's Conference on Arizona Beauty in 1968 brought together over 500 people in Scottsdale. State and national experts discussed with the participants "ways to protect Arizona's natural and man-made heritage."

Initiated in 1970, cities and towns in Arizona adopted a 12-point plan for Keep America Beautiful Operation Clean-up. National awards were given to some of them. The Commission continued to work with this project for several years and gave awards of its own to deserving cities and towns.

An Awards Committee was established in 1968. Seventy-one awards have been given to individuals, businesses, cities, towns and others for outstanding work in protecting and/or improving or enhancing the environment. Each nominee has been carefully screened and, when necessary, sites have been inspected by the committee or members of the Commission.

In 1968 a U.S.-Mexico Joint Development Committee was formed which lasted for two years. It sponsored a "Border Beautification and Friendship Day Project." F. J. MacDonald, who was appointed chairman in 1967, was named as Arizona coordinator for the project to improve physical appearance of areas adjacent to the border and to improve cultural activities. In Nogales cooperation has become a reality with joint sewer facilities. The Commission was included in many of these meetings and prior to one a stop was made and Commission members participated in the ceremony that established an Historic Park at Tubac.

Phreatophyte eradication, the Wellton/Mohawk Irrigation District, chaparral management, plus studies of river channelization were focuses in 1970. Results were a change in projected chaparral management, no channelization of the Rilito River, and some preservation of phreatophyte areas along the Gila River. Efforts in this area continued during 1971, picking up herbicides and discharge permits of pollutants into waters as part of the study and action.

In 1973 the Commission sponsored a forum on environmental education at Flagstaff. The purpose was a three-way dialogue between elementary, secondary, and higher education professionals. Communication was established, particularly among the higher education personnel, resulting in changes in all three campuses.

A joint effort with the League of Women Voters in 1974-75 was the sponsoring of the Solid Waste Management Van (display). This Van was on call from schools and others throughout the state as an educational tool. Recycling techniques from the Van were put on permanent display at Lake Pleasant in 1975.

In 1972 the Commission promoted the Environmental Education Teachers Guide published by the State Department of Education with a special federal grant.

The Commission, in addition to its regularly scheduled meetings, has taken field trips once a year, as well as visiting sites of interest to environmental groups during meetings. Such trips have included

visits to the Peabody Coal Mine, Lavender Pit Mine, Decade 80 Solar/ Copper house in Tucson, paper recycling facilities, phreatophyte locations, several smelters, the Research Ranch at Elgin, site of the Helvetia Mine (new Anaconda Mine), and the Santa Rita Experimental Range.

This history would not be complete without mention of Janis Johns, executive secretary to the Commission since March, 1966. Obviously, the above matters, the very well-organized conferences, etc., would not have succeeded without her untiring efforts, devotion, and loyalty to the Commission. She died January 6, 1979.

The Annual Commission Workshop held in Flagstaff eventually replaced the Governor's Conference on Arizona Beauty. The workshops are open to the public, as are all meetings, and always include guest speakers and panelists of national repute. Workshop sessions provide recommendations which are voted on by the membership for subsequent action.

The most rewarding aspect of membership in the Governor's Commission is the opportunity to meet with other citizens and professionals, share and discuss various environmental concerns of the State of Arizona and the United States.

PASSAIC RIVER COALITION VS. ARMY CORPS OF ENGINEERS

by Ella F. Filippone and Betty A. Little*

The first environmental resource management agency in the United States was the U.S. Army Corps of Engineers, charged since the early 1800s with the care and cleaning of river transportation routes, later with flood control. If the Corps got a little carried away with its mission, it at least provided a haven for the officers who were to help win at Gettysburg, the Argonne, and Los Alamos. The dawn of the environmental era, however, found the Corps on the defensive, the target of activist potshots around the country. How a citizen's militia brought the Corps regulars to parade rest in New Jersey is the burden of this case study —a classic example of public participation in environmental policy, using environmental education as an artillery barrage to convert bureaucrats to an enlightened strategy of environmental management.

Environmental education is all-encompassing; it requires the citizen to have knowledge of the total system—not only the natural scientific process but of the social and political interrelationships as well. The often-referred-to syndrome of the scientific study which gathers dust on the shelves of local libraries is a clear example of research well done, but then the follow-through by a specialist in public affairs is not considered, and thus another good work falls by the wayside.

An environmental education program affiliated with an adversary cause can effect change; however, a time element must be present which permits the citizenry to gather information, interpret it, and then translate it into the language of the man-on-the-street. Hence, the case study of the Passaic River Coalition (PRC) vs. the U.S. Army Corps of Engineers is an example of a program which mobilized citizens (public and private) to action, which developed a new perspective toward planning by the Army Corps of Engineers in the New York District.

Fortunately, timing was on the side of the PRC, since recognition of environmental problems in the late 1960s placed a new perspective on the role of citizens and their participation in public decision-making.

The Passaic River Basin lies almost totally in northeastern New Jersey, containing the most densely populated communities in the United States. The Passaic River has been floodprone since colonial days, but in 1870, the New Jersey Legislature took action to begin to control the flooding problems.

Mrs. Filippone is Executive Administrator and Mrs. Little, Director of Education for the Passaic River Coalition, Basking Ridge, NJ 07920. Both have been associated with the PRC since 1969. Their major focus in establishing the PRC has been public service, environmental education, and environmental research on a multidisciplinary level.

However, political controversy already took hold, and by the late 1880s, the project was abandoned. In 1902 and 1903, two major storms occurred (the latter still being the storm of record), which precipitated the establishment of the first of many gubernatorial committees to evaluate the flooding problems of the Passaic River Valley. Always controversy arose, and nothing happened. Furthermore, as one studies the history of the committee deliberations, the final reports bear similarities to the original 1904 document. Thus by 1936, when the Corps of Engineers obtained the mandate to undertake flood control projects, the Passaic River program was amongst those selected. Again, reports were presented to the public only to be turned down. The last of these exercises was the report of 1968, entitled Passaic River Basin Water Resources Developmemt.

At the conclusion of a public information meeting held in Livingston, New Jersey, one man, Lary Wasserman, raised his hand and inquired whether there were any others present who did not like the Army Corps of Engineers-preferred program, Plan III or C. A small group met in the back of the room, and agreed after several meetings to establish an organization to raise the consciousness of the public and oppose Plan III and any other plan which would cripple the free-flowing river or impact on its environmental integrity. Funding would be obtained from the general public, always a difficult task.

Thus, in 1971, armed with a determination to save the Passaic, the authors developed a program for both the formal school system (secondary, college, and university) and the general public, which was introduced using the infusion method. The program needed to be adaptable to highly educated as well as the most uninformed; it had to be developed in short time spans, as crises occurred, public hearings arose, and the environmental point of view was being challenged. In addition, the watershed association, during lulls between public confrontations, was itself in a learning process and strove to place itself in a leadership position because of its commitment toward finding an acceptable solution and its growing expertise in water-related problems, and formal/informal education programs.

The first step taken by the PRC was the publication of a paper entitled The Passaic River and Its Role—1970, which was distributed to federal, state, county, and municipal officials as well as publics which could be identified as having an interest in the Passaic River. The response was positive, especially with regard to the need to build an institution devoted to public service, education and research focusing on the Passaic River Watershed.

The second step was the development and presentation throughout northern New Jersey of a slide program, with narrative, interdisciplinary in nature, entitled The Crisis of our Flood Plains. The program included not only the flooding aspects but also the positive ecological benefits of undeveloped flood plains. In 1972, 125 programs were presented to audiences of diversified concerned citizens, and over and over again, the PRC gained information as to the public's concern for their River and the need to develop a program of equity, not only for those who get flooded but for those who would have to sacrifice property under Plan III.

In 1972, a hearing was held for which the environmental community was well prepared, and the Board of Rivers and Harbors of the Army Corps directed the New York District to alter Plan III so that it would be in compliance with the then newly-enacted Federal Water Pollution Control Act Amendments of 1972. Thus, Plan III was scaled down, and became Plan II-B, but the large 30-foot-high, 7-1/2 mile long dam, with its 108 miles of levees and berms was still before public review.

A hearing was held in 1973 on Plan II-B, which again saw demonstrations by flood victims, environmentalists fighting for their river, and a meeting which ended with no victory at 1:45 a.m. During the interim time, however, the PRC began to collect a library of books and material on which to base argument and present facts; a Board of Advisors was established which included academicians, professionals, citizen leaders—all committed to a quality environment in northeastern New Jersey. Many of these individuals submitted "think" papers to the PRC for consideration as the continuous investigation of the problem was carried on.

An opinion poll was taken, which gave the PRC insight as to public understanding of issues not only regarding flood control, but the many interrelated problems of watershed management, including the complexities of planning and land use in an urban context.

In 1974, a newly-elected governor of New Jersey, Brendan Byrne, was challenged to decide whether to forward Plan II-B on to the Corps of Engineers in Washington or whether to send it back to the New York District. For a meeting with the Governor (which never took place), the PRC (which had during its five-year existence collected data on the river system, the laws, economics, data gaps, policies, public opinions, and a list of concerns too complex to develop in any narrative form) developed objections to Plan II-B in the form of questions. Over 103 questions were presented which demonstrated:

1. an indepth knowledge of pertinent laws, such as the National Environmental Policy Act, Presidential Executive Orders, and State laws;

2. an awareness and criticism of the economic implications which ranged from cost/benefit ratios to loss of jobs and economic impact;

3. knowledge of and an evaluation of engineering techniques, such as channelization;

4. an understanding and regard for the natural values of the area, and a desire to maintain and protect open space, parks and existing recreational opportunities, and the free flowing river;

5. an evaluation of the public support which was missing from Plan II-B, required under a Congressional mandate.

Since the private citizen is not always privy to the goings-on in the Governor's office, the day (April 11, 1974) the PRC and its contingency of public officials were to meet with Brendan Byrne, was the same day the Governor signed a letter forwarding Plan II-B onto Washington.

Therefore, the 103 points were sent far and wide and initiated further discussion and self-education on the part of the public, to that point where one member of the New Jersey Congressional delegation made the statement that if only one of the points raised was correct, he would fight Plan II-B. The people wanted answers to the questions raised, and because the PRC had done its homework, the citizen advocacy group knew that no indepth study had ever been done by the Corps which would enable them to answer most of the 103 questions except in a very superficial manner.

By 1976, when the project arose before the House Public Works Subcommittee on Water Resources, 76 more questions were added to the original list. In addition, special papers relating to the history of flooding on the Passaic as well as potential analysis of the critical nature of the problem were presented to the Congress. Between 1974 and 1976, intensive meetings were held with the Board of Advisors reaching out to educate the public and elected officials on the inadequacies of Plan II-B. When the hearing was held on September 8, 1976, the Members of Congress representing the region, state, county, and municipal officials as well as representatives of the public interest group (including the PRC) went to Washington to argue the issue. At the conclusion of the hour-long, tightly run debate, Congressman Ray Roberts (D-Texas) stated: "I would like to compliment all of the witnesses both pro and con. I think it is the most interesting group we have had in all the time we have met."

Congresswoman Millicent Fenwick (R-New Jersey) in her statement presented the charge to Congress when she stated that:

> I am here to testify about a flood control project for the Passaic River in New Jersey. Many of the affected communities in Morris and Essex Counties are in the district I represent.
>
> It has been a continuing concern of mine, not only since I took office, but even before, because I am concerned with conservation and flood projects in general in the State.
>
> The Passaic River floods have taken lives and damaged property and can continue to do so in the future. The 787 square miles that constitute the Passaic River basin must have a sound flood control system, but it must be a system which recognizes the wishes of the local communities and the efforts many of the towns have already made....
>
> It is clear that we must act to control the flooding, but I earnestly hope and expect that the subcommittee will authorize only phase I, design memorandum, for the Passaic River.

> The legislation must make it clear that before any construction is begun, the Corps of Engineers has to return to Congress for further authorization.
>
> In addition, it should be made clear in the legislation that all alternatives, including nonstructural alternatives. . .should be examined in detail.
>
> . . .The people want to see alternative nonstructural approaches studied and submitted to the towns and to Congress before any construction plan is approved.
>
> If this subcommittee sends the House a bill which is tightly and carefully drawn, authorizing only phase I, authorizing the Corps of Engineers to study all the alternatives and requiring a return to Congress for further authorization before any action is taken, I believe we will be acting prudently in the public interest.
>
> The people of my district want to be sure that they will be able to be an active part of the decision-making process for the Passaic River, through public meetings and through their local officials.
>
> They want to be sure that they will be able to examine the studies and recommendations before any construction is started. And so, Mr. Chairman, do I.[1]

The Phase I Design Memorandum was approved by the Congress with a General Consensus statement attached which was drafted two days after the hearing by the advocates, led by the PRC. An authorization of $12 million was attached to the project. The Army Corps of Engineers must again restudy the Passaic River Valley using the following guidelines:

> Controversy revolves around a concern that conclusions reached by the Chief of Engineers Report of February 18, 1976, will be given priority to the exclusion of equal consideration of alternatives, and other objectives, including water management and attainment of water quality goals, pursuant to P.L. 92-500. Controversy over construction of the project emanates from many communities in Morris and Essex Counties that stand to lose substantial portion of their land to structural solutions; from conservation interest who seek non-structural solutions; from those who reject dams, dikes, and levees in their communities; from those who believe other forms of construction such as a diversion tunnel or a system of tunnels addressing the needs of the entire basin should be re-evaluated; from those who believe water supply objectives should be met together with flood control....
>
> The Committee directs the reformulation of the plan for water management and flood control for the entire Passaic River Basin. Said plan shall include a new environmental

impact statement which is the subject of public hearings and formulation of a final environmental impact statement to be submitted to the Council on Environmental Quality.

Local opposition to any plan which relies upon extensive use of dikes, dams and levees such as those proposed in previous survey reports mandates that the following alternatives or any combination thereof shall be the only ones surveyed and considered:

1. A full range of non-structural flood control alternatives to include land acquisition, flood plain mapping, flood proofing, developing early warning systems and relocation of buildings.

2. A tunnel diversion plan.

3. A system of tunnels addressing the needs of the entire plan.

4. Plans that combine local protection works where locally acceptable and non-structural solutions including improvements to stream carrying capacity in accordance with different needs in the Lower Basin and in the Central Basin.

5. Evaluation of fulfilling water supply objectives together with flood control.

6. Aquifer recharge and underground storage.

7. Reservoir management in the headwaters.

Coordination with federal, state and local agencies, particularly the New Jersey Department of Environmental Protection in its efforts on flood control and management of the total water resource cycle including water supply and water quality, shall be carried out by the Corps of Engineers.[2]

Is the education program over? It has only begun. The Army Corps finally has the means to investigate the problems, needs, and values of the region, but parallel with their efforts, the citizenry must question, evaluate, and determine whether Government's response serves the best interests of the public and the environment in which they chose to live.

FOOTNOTES

1. U.S. House of Representatives. Hearings before the Subcommittee on Water Resources of the Committee on Public Works and Transportation, 94th Congress, 2nd Session, September 8, 1976, Water Resources Development, p. 771, 1976.

2. U.S. House of Representatives Report #94-1702, Committee on Public Works and Transportation Committee. Report on the 1976 Water Resources Development Act, September 27, 1976.

COMMUNITY INVOLVEMENT IN AIR QUALITY PROBLEMS IN STEUBENVILLE, OHIO, AND WEIRTON, WEST VIRGINIA

by Jo Ellen Force and Thomas A. Seliga*

Steubenville-Weirton in the Upper Ohio River Valley holds the dubious distinction of having one of the worst air pollution problems in the country. Yet the Atmospheric Sciences Program at The Ohio State University is also nationally distinguished. How do you develop and test methods for the transfer of skills from experts at universities to concerned citizens so that the process of environmental problem-solving can be advanced? This is a mixed review of one such effort at environmental education.

Among the important missions of a university is community service. The need to understand and resolve the complexities of the environmental trade-offs that communities must make today presents an opportunity for universities to carry out this mission. The case study presented here reports on an effort to transfer some of the knowledge and expertise available at the university to concerned citizens so that the process of environmental problem solving at the community level will be advanced.

Background

The Atmospheric Sciences Program at The Ohio State University has been involved in the Steubenville-Weirton community since the program's inception in 1971. In an effort to relate the activities of the Atmospheric Sciences Program to a major atmospheric sciences-related problem in the state of Ohio, two internal studies on the air pollution problems of the community were made during the program's first year. These studies brought about the realization that the community's self-perceptions and the related sociological implications of the problem play an important role in both the technological and economic aspects of poor air quality. The Upper Ohio River Valley community faces the interesting dilemma of many "single-industry" areas with the notable exception that it received nationwide notoriety because of a front page Wall Street Journal article in 1970 proclaiming it to have the No. 1 air pollution problem in the nation, according to the United States Environmental Protection Agency (EPA). The problem is due primarily to local meteorological

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Dr. Force is Visiting Assistant Professor, College of Forestry, Wildlife and Range Sciences, University of Idaho, Moscow 83843. She received her Ph.D. in Industrial and Systems Engineering at The Ohio State University, where she was a graduate research associate in the Atmospheric Sciences Program. Dr. Seliga is Director of the Atmospheric Sciences Program and a faculty member in the Department of Electrical Engineering at The Ohio State University, Columbus 43210. In addition to air pollution-related studies, his research interests include atmospheric wave propagation and solar-terrestrial physics.

factors and a heavy concentration of coal-burning power plants and steel industry operations. This is evidenced by the fact that the steel industry alone employs over two-thirds of the wage earners in the area.

Concurrently, and independently of Atmospheric Sciences Program activities, individuals at Ohio Wesleyan University and an engineering consulting firm were conducting an economic and market analysis of the community sponsored by the Department of Housing and Urban Development (HUD). Through a series of personal contacts in late 1972, Ohio State, Ohio Wesleyan and the consulting firm personnel met and began discussing the possibilities of conducting a National Science Foundation-sponsored study in the area. Meetings were also held with the mayors of Steubenville and Weirton, local air pollution agency representatives and local steel company representatives. The consulting firm played an important intermediary role in establishing some of the initial university-community contacts. They had worked with local business and government leaders in the past and had an invaluable understanding of community dynamics in the valley.

During 1973, the Atmospheric Sciences Program submitted a proposal to the National Science Foundation's Office of Experimental R&D Incentives with supporting letters from community representatives. This proposal was to organize and manage a two-day conference in order that local governments could get together with citizens, labor, business, industry, state and federal governments, and universities with the goal of forming new institutional alignments in order to attack the problem of air quality. In the spring of 1974, another proposal was submitted to the Office of Environmental Education, Office of Education, U.S. Department of Health, Education and Welfare. This proposal requested support for the development and testing of methods for the transfer of skills from experts at universities to concerned citizens so that the process of environmental problem solving could be advanced. The primary goal of the activities was to better equip community members to participate in the environmental management process. Both proposals were funded in the summer of 1974.

The Conference

In the late summer of 1974, a series of informal planning meetings were held between the university staff and local government officials, community members, health-related professionals, steel company representatives and regulatory agency personnel. In situations such as this, it is imperative that the university staff be tactful and aware of sensitivities in the community, not overlook any groups that may be interested or wish to be involved, and be very open, receptive and non-judgmental of all ideas and concerns presented.

The NSF-supported two- [illegible]erence was held in early November 1974 at a state park lod[illegible]st [illegible]n Ohio. A neutral location, nearby but outside of the com[illegible]s chosen in order to maximize participants' participation in the [illegible]ce and allow for effective informal exchange of ideas. T[illegible] grant provided monetary support to cover conference expenses for citizens and others unable to obtain support

from their employers or agencies. Forty-one people attended the conference.

At the first morning session, presentations were made by experts on the following topics: community approaches to air pollution problem solving, air pollution indexing, and health effects of air pollution. In the afternoon, the attendees divided into three working groups representing 1) regulatory and statutory agencies, 2) business and industry, and 3) health and welfare groups. Each group prepared a report summarizing the problem from their perspective and proposing solutions. These reports were presented to and debated by the entire group the following morning. A summary report was prepared by Dr. Seliga and Dr. Ralph W. Swain and is available for the cost of duplicating from the Atmospheric Sciences Program at Ohio State.

Although undocumented, it appeared that the social hour and dinner, held the evening of the first day, was of considerable importance to the establishment of communication amongst community adversaries. Conversations took place well into the night and individuals from all three groups commented to the conference staff that it was the first time many of them had spoken candidly and "off-the-record" with each other.

In the working group reports there was general agreement that improved air quality must be achieved while maintaining the community's economic vitality. Only the business and industry group did not propose community education or citizen involvement as important to solving the problem.

Community Education Workshops

Based on the university staff's contacts in the community and the reports resulting from this conference, an overall objective for the HEW sponsored environmental education workshops was formulated: *to provide the citizens of the Steubenville-Weirton area with opportunities in an impartial atmosphere for obtaining a better understanding of the problems associated with air quality in their region.*

First Workshop

In order to increase the number of citizens who might attend the workshops and to determine the relative importance of the four proposed study areas (nature of air pollution, health effects, economics, and regulation), a questionnaire was distributed to 65 people who had already been identified as interested citizens. The purposes of this questionnaire were: 1) to help determine the amount of time to spend on each subject area; 2) to determine the day(s) of the week most desirable to the participants; 3) to determine the time of day most convenient; and 4) to obtain suggestions of other possible participants.

Of the 55 percent who responded, over half were willing to spend at least one-half day on each of the four suggested topics, indicating a general acceptance of the four topics proposed by the workshop

staff. Also, based on responses to the questionnaire, two 9:00 a.m. to 4:00 p.m. sessions on consecutive weekdays were selected rather than evening or weekend sessions.

For this workshop, held in April 1975, information was mailed to all people known to the staff, all physicians in the area, public school administrators, board of education members, agricultural extension agents, labor union leaders in the area, officers in many community organizations, and to those on mailing lists provided by the local air quality agencies and health planning associations. Industry representatives were also invited. Overall, approximately 300 citizens in the area received the information and registration cards by direct mail. Advertising space, stating the purpose and content of the workshops and including a registration form, was also purchased in the three local newspapers. The ads were printed for three consecutive days three weeks prior to the workshop and again for the three days immediately preceding the workshop. Several registration cards and inquiries were received from newspaper readers. In addition, one local paper included an editorial on the upcoming workshop. The North Ohio Valley Air Authority included a notice of the workshop in its monthly newsletter.

The workshop consisted of four separate half-day presentations on the following topics: 1) basic information on the nature of air pollution, 2) detrimental effects of air pollution on health, 3) costs of air pollution and its abatement, and 4) the regulation process. Although everyone was urged to attend all four sessions, each session was planned as a separate unit. This was done to encourage those who were unable to attend all sessions to attend any half-day sessions which their schedules permitted.

The basic format of each session included a presentation by a knowledgeable speaker or panel of speakers from nearby universities and public agencies in Ohio, West Virginia, and Pennsylvania and a question-and-answer period moderated by one or more members of the workshop staff. A variety of written materials, primarily from the U.S. Environmental Protection Agency and the American Lung Association, were also made available to the participants.

The auditorium of the Jefferson Technical Institute in Steubenville was chosen as the site for the workshop. This location was suggested by a number of local citizens.

Following the workshop, an evaluation questionnaire was mailed to the 66 participants. This identified considerable community interest in the need to study local health costs, local control costs to industry and point sources and emissions in the area. There was also general satisfaction with the level of material presented and new information and understanding gained as a result of the first workshop.

Second Workshop

It was decided that the second workshop would provide a small group of highly interested citizens with more indepth information concerning the local air quality problem. It was hoped that, out of the 29

citizens participating, several persons would come forth to assume leadership roles in the community's future efforts to improve its air quality.

A one-and-one-half day workshop was held at the Weirton Community Center. In order to encourage interaction and to provide continuity between sessions, caterers provided lunch at the Center each day. This was very beneficial, as it provided an opportunity for the citizens to interact with each other in a relaxed learning environment and for the staff and other experts to become better acquainted with the participants.

The topics for the three sessions were: 1) an emissions monitoring and abatement assessment of the local situation, 2) a discussion on citizen participation and the legal process as related to air quality, and 3) a presentation addressing the effects and costs of poor air quality and the need for further studies in the area to assess the costs more accurately.

The first session called for active participation by the citizens, requiring them to:

1. Identify and locate the major sources of pollutants in the valley on 7-1/2 minute topographic maps of the area.

2. Indicate on the maps the quantities and types of pollutants emitted at each source.

3. Locate all monitoring sites on the maps and to indicate what pollutants are monitored.

4. Become informed of the status of each emitter's compliance with regulations.

The participants were very enthusiastic about this activity. Copies of the completed maps were later duplicated by the workshop staff and returned to the local agencies for their retention and use.

Overall Evaluation of Workshops

After the second workshop, an evaluation of the year's activities was made by examining a questionnaire designed to elicit the subjective attitudes of those responding. The results are summarized below:

1. There was general agreement among participants that the workshops increased citizen awareness of the need to improve the region's air quality.

2. There was general concern about how to get more citizens involved. The absence of medical doctors, labor union personnel, and young people in the community was noted by several people.

3. A majority felt that both a small group workshop format and large group lectures are needed to educate the community. Although most stated that a small group is more productive for the participants and is needed to gather information and material, they also favored large community meetings in order that more citizens could learn about the problem.

4. There was general agreement that the topics discussed were relevant and informative to the participants. The participants were also pleased with the experts who contributed balanced information on the various topics addressed.

5. There was also recognition that at all workshops an effort was made to present the pros and cons of the issues involved. The general feedback indicated that third party objectivity was maintained by the staff and that such objectivity is vital to the success of environmental education activities.

The respondents also made several comments and suggestions concerning possibilities for future community activities. Everyone felt there was need for further activities, which might include:

1. A community college-based course in continuing education (or adult education) on air quality issues.

2. The development of a Speaker's Bureau to provide programs for local organizations.

3. A short series of workshops that would require participants to collect data and read material between sessions. It was generally felt that only a few members of the community would be willing to make this kind of commitment.

Most respondents felt there is a need for outside groups to be involved in community education activities in order to maintain objectivity, to provide expertise, and to act as a moderator between local adversaries.

Summary

Other observations made by the workshop staff as a result of their involvement were as follows:

1. There was little recognition by industry that air quality was a community problem. In their view, whatever problem existed was primarily the responsibility of the enforcement agency. It was also very difficult to get the industries to participate in an informative way rather than in a defensive manner.

2. There are severe problems of continuity when a university staff becomes involved in a community. These involve personnel and time limitations.

3. Funding support was needed and not forthcoming for the technical problems of air pollution control, atmospheric modeling, and better understanding of health effects. Further educational activities are impeded without a sound data base and additional expertise about the local situation which would have resulted from such studies.

4. The seeds were sown amongst some community members for commitment and involvement in the community's air quality problem but a "critical number" never came forward with enough momentum to make significant progress.

5. Another factor of considerable importance which came out of the workshop is the desirability to conduct environmental education activities during periods when the specific environmental problem is most in the public mind. For example, it was apparent that interest in air quality workshops would have been significantly greater had they coincided with periods of poor air quality. Due to meteorological conditions in the eastern United States, the rate of occurrence of local inversions and air stagnations is greatest during the late summer and autumn months. Consequently, citizen interest in air quality is much greater during this period than at other times of the year. Although it was not possible to hold autumn workshops under this project, this factor should be given serious consideration by anyone planning future environmental education activities concerning air quality. Other areas of environmental education might also benefit by more closely matching activities with occurrence of the problem, particularly when the problem occurs in cycles.

Several copies of the complete report of the workshop activities, including all questionnaires, programs, and staff prepared materials that were made available to participants, are still available from the Atmospheric Sciences Program. The workshop report is also available in microfiche in the Educational Resources Information Center (ERIC) system (ED 125 869).

REGIONAL ENVIRONMENTAL PLANNING AS AN ORGANIZING FRAMEWORK FOR ENVIRONMENTAL EDUCATION

by James Joseph Gallagher and Martin Hetherington*

Regional environmental planning is a mixed bag. Federal and state agencies may feel it is too "local," while county and municipal instrumentalities may feel it is too much of an intrusion on their parochial prerogatives. Nonetheless, regional planning enjoys Congressional blessing and scholarly acclaim. Yet citizens—young and old—may be ill-equipped to make regional planning really work. This is a report about how one state university and its environmental education component have gone about upgrading citizen interest, awareness, and adeptness in and of regional planning via workshops for secondary teachers of science and social studies.

Introduction

For more than a decade there has been a high level of concern in the United States about the environment. During this period of time, many environmental education programs have been developed and some have flourished. Many of these programs emphasize an ecology theme which is designed to help students understand the interdependencies which exist in the biosphere. Many programs also emphasize people's impact on the environment and they help students explore the causes and consequences of environmental pollution. These themes are important for environmental education since they provide students with the background needed to understand many environmental issues. However, either singly or together, the themes are insufficient because they do not provide students with knowledge and skills needed to work toward correcting current problems or preventing future ones. For this reason, environmental education which is based on these themes alone may engender a sense of hopelessness and frustration.

An additional theme, regional environmental planning, is proposed to overcome the insufficiencies identified above. The processes and concepts of regional environmental planning will compliment study of ecology and human's impact on the environment especially in that it can provide students with the knowledge and skills needed to bring about social, economic, and political action on important issues which impact both natural and built environments.

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*Dr. Gallagher is Director of the Science and Mathematics Teaching Center at Michigan State University, East Lansing 48824, and is Past President of the National Association for Environmental Education. Dr. Hetherington is Associate Professor in the Science and Mathematics Teaching Center and heads the project on Regional Environmental Planning.

There are several reasons why regional environmental planning has not been included in the environmental education curriculum in an extensive manner. First, it is a relatively new field of endeavor and it is only recently that it has become widely employed. Federal legislation establishing regional planning commissions on a national scale was passed in 1965. Second, teachers are not generally aware of the concepts, techniques, and resources that are used in the field and, therefore, do not include it, generally, in environmental, social studies, or civics programs. Third, practically no instructional materials exist for teachers who are knowledgeable about regional environmental planning to include it in their offerings. Fourth, environmental educators themselves, in many cases, have felt that their message was valid in its own right; and when people were aware of environmental problems, and their causes, remedial action would occur, automatically, without having to resort to politics. We, therefore, placed great emphasis on increasing the awareness of our students and the public hoping, sometimes in vain, that action would occur.

The Potential [illegible] gional Environmental Planning

In some parts of the United States and in other countries, regional environmental planning has been an effective aid to local governments in making decisions about matters that transcend their boundaries. Regional planning commissions serve a range of functions but two stand out:

1. they provide a forum for representatives from adjacent municipalities and counties to examine and debate collective solutions to common problems, and

2. they often have sufficient resources to hire skilled personnel who can acquire data and prepare alternative plans which allow local governments and individual citizens to make more informed decisions on environmental, social, and economic questions.

Unfortunately, regional environmental planning has not reached its full promise as an aid to local governments. Local officials have been reluctant to participate in regional planning because of lack of public understanding and consequent opposition to it. Local and county officials, and the electorate in these units, guard their authority and decision making on basic environmental issues such as planning future land use, transportation, water supply, waste disposal, and other matters that affect environmental quality. Therefore, cooperation between regional planning commissions and local or county governments has not been as productive as it could be, in spite of the potential benefits that can result.

Thus, a problem which environmental education can address is to help secondary school students and adults understand the importance of collective action on a regional basis in planning for environmental improvement. When added to an understanding of our interdependence with nature and how people can affect the environment adversely,

regional environmental planning provides a framework for positive action to improve the environment. Moreover, it is a potent domain of action which lies within the ability of students and citizens, generally, to comprehend and influence.

Project Description

It was from this perspective that the authors embarked on a project to assist a group of secondary school teachers in comprehending the processes by which regional environmental planning is accomplished and the issues that are the objects of this planning. The hypothesis of the project was that incorporating regional environmental planning would strengthen secondary environmental education curricula and increase their relevance to students. It was felt that regional environmental planning could serve as a focal point for environmental education because it allows for the meaningful integration of multidisciplinary content. Subject matter drawn from the natural sciences, social sciences, economics, and politics, plus a generous application of practical wisdom, could be brought to bear on important issues in students' communities. Moreover, it was felt that regional environmental planning is an issue that confronts a large segment of our society today and will increasingly influence people in the future. Therefore, knowledge of the skills and techniques needed to influence regional environmental planning in positive directions would be an important addition to the repertoire of skills of future citizens. Thus, the project was designed to improve teachers' understanding of regional environmental planning and to help them affect the curriculum in their schools by providing an organizing theme around which lessons, activities, courses and programs could be structured.

During the 1977-78 school year the authors worked with the staff of the Tri-County Regional Planning Commission located in Lansing, Michigan and with other faculty members from Michigan State University to design and implement a series of six workshops for secondary school teachers of science and social studies. The goals of the project were to help secondary school science and social studies teachers develop an understanding of the need and procedures for regional environmental planning and assist them in incorporating these ideas in their local school curricula.

The objectives of the workshops addressed three areas: (1) subject matter content—improving participants' understanding of concepts and principles underlying regional environmental planning; (2) development of process skills—improving participants' competence in information retrieval and in utilizing social and political processes, especially in influencing decision making; and (3) improvement of instruction—extending participants' knowledge of and skill in using instructional resources and curriculum improvement strategies. These objectives are elaborated below:

Objectives relating to subject matter content are directed toward increasing teachers' familiarity with concepts drawn from both natural sciences and social sciences. The teacher would develop an understanding of and achieve competency in teaching the following basic concepts and principles.

a. land use factors (such as aesthetics, soil type, geologic structures, etc.) and the politics and economics of alternative uses;

b. community water supply systems and treatment processes;

c. solid waste disposal systems and technologies;

d. regional air quality standards and pollution control technologies;

e. factors and alternatives in transportation systems;

f. elements of environmental impact statements; and

g. purposes and interrelationships found in governmental and private agencies which influence environmental planning.

Objectives relating to development of process skills are designed to help future citizens have confidence and competence in influencing decision making at all levels of government. These skills involve:

a. identifying processes which individuals and groups can use to influence governmental decision making;

b. acquiring and using accurate and complete information to substantiate and argue for or against an issue;

c. communicating ideas to government officials; and

d. analyzing controversial issues.

Objectives concerning improvement of instruction are designed to help teachers communicate the content and goals of the regional environmental planning process to students, administrators, and other teachers. The following objectives are directed toward extending the teacher's knowledge of and skill in using instructional improvement techniques in science, social science, and/or environmental education programs. This process also has a valid application in a school-wide or community involvement program. Teachers should be able to:

a. collect and evaluate source materials that can be used to teach and need for and processes of regional environmental planning;

b. utilize materials and approaches such as simulation games, field activities, and data analysis techniques where applicable;

c. formulate a pilot plan for teaching regional environmental planning in their own classes, with their peers, or on a school-wide basis; and

d. work with peers and administrators in implementing education programs.

The Project Plan

The overall plan for the project was to conduct a series of six in-service workshops for secondary teachers of science and social studies from the Tri-County Region which comprises the Greater Lansing area in south central Michigan and to provide assistance in local school districts in helping teachers and their associates incorporate this content into the local school program. The teachers were drawn from middle schools, junior high schools, and high schools in the Tri-County Region. Fifty-seven teachers from the three counties participated; these represented a wide variety of backgrounds and experience which proved to be beneficial to the group interaction. These teachers came from 35 different schools in the area. The participants were distributed as follows:

26 Senior High School Science Teachers
3 Senior High School Social Science Teachers
9 Junior High School Science Teachers
4 Junior High School Social Science Teachers
5 Middle School Science Teachers
6 Middle School Social Science Teachers
2 Elementary School Teachers
2 Principals or Administrators

Participants were selected on the basis of (a) their interest in subscribing to the goals of the project, (b) their demonstrated performance as intellectual opinion leaders in their schools, (c) recommendation of their supervisors, and (d) the willingness of their supervisors to provide the participants with opportunities to apply learning from the workshops in their own classrooms and schools. It was originally hoped that there would be roughly equal numbers of science and social science teachers and that they would work in teams within each building. As is evident from the foregoing data, there was a shortage of social science teachers in the group and attempts to augment this population were not successful.

The workshops were conducted after school, beginning at approximately 4:00 p.m. and concluding at 10:00 p.m. Thus each workshop was approximately six hours long and included a working dinner. That is, some part of the program was presented during the dinner period so there was nearly six hours of instructional contact during each workshop. Within this framework, workshops were of two major types. Four of the six workshops were for all 57 participants from all three counties. These were conducted at Michigan State University and were comprised of somewhat formal presentations. Two of the workshops were conducted in each of the three counties for the participants of that county. These two workshops were conducted in a seminar format since the groups were smaller, composed of approximately one-third of the 57 participants in each of the groups. The general description of each of the workshops follows.

The First Workshop was conducted at MSU on October 25, 1977. The purpose of this workshop was threefold: 1) to provide participants with an overview of the workshop program and local assistance plan, (2) to give people an introduction to regional environmental planning, and (3) to introduce them to one of the major issues that would be

discussed in the workshop series, that of land use planning. The presentators in the workshops included: the authors; Ms. Donna Stein, a state legislative aide, who gave a slide-tape presentation on land use legislation in Michigan; Mr. Herbert Maier, Executive Director of the Tri-County Regional Planning Commission; and Dr. Sanford S. Farness, Professor of Urban Planning at Michigan State University. These two men gave an overview of regional environmental planning.

Workshop II—Replicated three times, once in each of the counties in the Tri-County Region. Meetings were all held in the month of November 1977. The main focus of these meetings was transportation planning. Each of the meetings had two major presentators: (1) Mr. Gordon Szlachetka, Chief Planner for Tri-County Regional Planning Commission, who gave detailed information on the processes of transportation planning in the Tri-County Region. In addition, each county was represented by a county commission member who discussed the processes by which political decisions are made in relation to environmental planning issues in that particular county. Each one also detailed how their county commission related to the Tri-County Regional Planning Commission. In this meeting, time was devoted also to curriculum planning strategies that could be used in schools.

The Third Workshop was held in January 1978 at Michigan State University and the topic was Air and Water Quality. The presentators at this workshop included Sol Baltimore, Director of Environmental Health for the American Lung Association who is an authority on air quality in Michigan; Thomas Looby, Associate Planner for the Tri-County Regional Planning Commission, who presented information on the 208 Water Quality Management Plan for the Tri-County Regions; Dr. Darrell King from the Institute of Water Research at Michigan State University discussed water quality past and present; and Dennis P. Tierney, Michigan Environmental Review Board, stressed Air and Water Quality from the prospective of the Environmental Review Board. In addition, a variety of seminar options were made available on a number of educational issues. Teachers were introduced to laboratory techniques, simulations and games that can be used in the classroom to teach regional environmental planning, and to strategies for curriculum development.

The Fourth Workshop was held in mid-February, also at Michigan State University, and dealt with two major topics: solid waste disposal and political processes. The presentators included Mr. Tim Wright, Michigan Department of Natural Resources and Mr. Thomas Looby, Tri-County Regional Planning Commission who dealt with solid waste treatment, management, and disposal. The Honorable Lynn Jondahl, a State Representative in the Michigan Legislature, gave a presentation on effective use of the political process. All presentators conducted question and answer sessions. Time was also devoted to curriculum planning.

The Fifth Workshop was conducted during March of 1978 in each of the counties using the same format as the second workshop. The purpose of this workshop was to review and discuss the major topics that had been dealt with in the previous four workshops; that is, land use planning, transporaation, air quality, water quality, and solid waste

disposal. In each of the counties, the participating teachers also were asked to present a report on activities in curriculum improvement in their respective school districts relevant to this project. Time was devoted to specific problems related to planning for curriculum improvement in schools in each county.

The Sixth Workshop was held on May 9, 1978 at Michigan State University. The focus of this meeting was to bring the participants up to date on changes that had occurred in the areas of land use planning legislation, water quality planning, and transportation planning during the months since the project began. Each of these topics had been undergoing considerable change in terms of actions by the Michigan Legislature and by the governing bodies in the Tri-County Region during the period of 1977-78. The presentators included John Coleman from the Tri-County Regional Planning Commission; the Honorable Steven Monsma, a State Representative in the Michigan Legislature; and Dr. Sanford Farness from the Department of Urban Planning at Michigan State University. In addition, the authors made presentations on the inclusion of regional environmental planning in the school curriculum.

In addition to six workshops, teachers were given additional assistance in their local school districts by members of the project staff. Three advanced graduate students, each of whom were experienced teachers, were assigned to provide assistance to the participants in adapting the workshop content to local school curricula. These staff members, as well as the Project Director, met with participants in the period between workshops and aided in developing local school projects on regional environmental planning and worked with either teachers and administrators in bringing about curriculum reform.

Project Outcomes

The major consequences of this project are four in number:

1. A corps of 57 teachers has been introduced to the major concepts and issues of regional environmental planning and they have begun to determine how these concepts might be incorporated in the curriculum of their schools.

2. A working relationship has been established among MSU faculty members, the staff of the Tri-County Regional Planning Commission, some legislative officials in the state of Michigan, and the corps of teachers from 35 schools in the Tri-County Region. The full impact of this relationship is yet to be realized. The teachers have acquired new skills and their horizons have been broadened regarding the importance of regional environmental planning as an organizing framework for environmental education. The university people have a better understanding of the problems and issues which teachers face in attempting to inculcate high school students with values and knowledge related to the environment. Staff members of the Tri-County Regional Planning Commission

and legislators have a better understanding of what it takes to instruct students and to improve curriculum in schools. In the months and years ahead, these people may collaborate on the basic ideas presented in the workshops and work together to introduce new programs and teaching units designed to prepare the young people in the Tri-County Region for more effective citizenship. The project only laid the ground for future action. There is need for additional moral and intellectual support for teachers in their attempts to improve curriculum.

3. The need for instructional materials was underscored. One of the major frustrations of project staff and participating teachers was the paucity of materials that could be used to incorporate regional environmental planning in the curriculum. Teachers who were attempting to include units in their school programs were required to prepare their own instructional materials. In many cases, this was a major obstacle to the implementation of the ideas that were presented in the project. Often teachers lacked both the time and the accessibility to data and planning documents which were needed to construct lesson plans and units.

4. The most readily identifiable consequence of the project is a booklet entitled A Guide to Teaching Regional Environmental Planning. This booklet was prepared by the authors along with a graduate assistant, Michael Thomas. It was printed in September 1978 and was distributed to subscribers to The Journal of Environmental Education and members of the National Association for Environmental Education. The guide has also been entered into the ERIC system. The guide is 52 pages in length and consists of a brief summary of the environmental planning workshops, a rather extensive introduction to regional environmental planning source material, and some ideas to help teachers introduce regional environmental planning into the school curriculum. A Supplement to the guide will be prepared during the 1978-79 academic year on a continuing project grant from the U.S. Office of Education. This supplement will include some additional resources to help teachers with incorporation of regional environmental planning into the school program. The supplement will be available on request from the authors in the summer of 1979. It also will be entered into the ERIC system to assure its continuing availability.

Conclusion

Regional Environmental Planning has been demonstrated to be a viable vehicle for improving environmental education. It is a subject matter that has great relevance to the needs of present and future citizens. It can help people understand environmental issues that are otherwise remote and abstract. It is of increasing importance as land and other natural resources become more scarce and expensive. A major obstacle to teaching regional environmental planning is the lack of materials

for instruction. It is important that scholars and funding agencies recognize this lack and take leadership in developing appropriate instructional materials to assist teachers in this important area.

CITIZEN INVOLVEMENT IN WISCONSIN'S PILOT ENERGY EXTENSION PROGRAM

by James W. Gooch*

A statewide energy audit training project, energy assistance for low and moderate income urban residents, demonstrations of energy conservation in public buildings, energy conservation in hospitality businesses, energy conservation in agricultural transportation and food distribution, safety and efficiency in wood heating, an energy information center—these are the aspects of a pilot energy extension education program in Wisconsin, joint between the Office of State Planning and Energy and the University of Wisconsin-Extension, using federal funds to demonstrate the application of time-tested adult education techniques to the new demands of energy conservation. Heavy citizen involvement and the use of existing technology and delivery systems are boosting the program's impact.

Driving a pickup truck over a marked course at the 1978 County Fair, Wisconsin's Grant County farmers were competing in a new contest, to see how much distance they could coax from a few cups of gasoline.

"They still need us," retired Green Bay citizens thought, as they read of a new program inviting senior citizens to a training session designed to encourage them to return to their neighborhoods and tell others on fixed incomes how they could weatherize their homes and cut fuel bills.

Dodgeville people listened, asked questions and finally approved when University experts suggested some slight renovations for their beautiful and historic old courthouse in the fall of 1977. It was one of eight public buildings that would be used to demonstrate energy conserving steps to local officials and to the citizens who frequent public buildings.

Meanwhile up in Door County's Sister Bay area, a resort owner checked his electric bill and found he'd saved $300 due to a turnoff timer he'd installed for his parking lot lights just ten months ago.

All of these people share two things. They're taking steps to save energy and, although they may not be aware of it, they've been influenced by (and are helping to shape) Wisconsin's new Energy Extension Service.

**Mr. Gooch entered the field of adult education in 1957 after serving six years as a national magazine field editor and five as research editor for Ralston Purina Co. During his 13 years with Michigan State University and the past nine as Information Director for the University of Wisconsin-Extension, Madison 53706, he has communicated extension and outreach services and has assisted many community and regional planning bodies.*

Judging from interim reports from Washington and the traffic of agency people and educators coming from other states to review and observe, the Wisconsin program is well on its way to becoming one of the national models for energy conservation education.

When energy conservation funds became available to the U.S. Department of Energy in 1977, the federal agency invited all state energy offices to submit proposals for projects to encourage energy conservation and the use of alternative fuels. Ten pilot states would each receive approximately $1 million and at the end of 18 months (March 31, 1979), the collective programming successes (and failures) would be used to develop guidelines for a federal energy extension education program.

In Wisconsin, the Office of State Planning and Energy (OSPE) developed a proposal, with help from the University of Wisconsin-Extension (UWEX), which called for OSPE to administer the Pilot program but to delegate its management and implementation to UWEX.

The Wisconsin proposal was accepted as a pilot program, along with proposals from Alabama, Texas, Washington, New Mexico, Michigan, Pennsylvania, Wyoming, Tennessee and Connecticut.

The Wisconsin Energy Extension Service (WEES) was underway, even before federal funds were assured. WEES director William Bernhagen was pleasantly shocked to discover, after a search and screen committee had chosen him in the fall of 1977, that an energy program newsletter had already published two editions and that Extension specialists and county agents had already "gone to the field" to implement some of the project goals.

The Wisconsin Energy Extension Service got off to a fast start because of three factors:

1. There was already much citizen interest at the grassroots community level and among organizations that for years had been focusing on conservation and the environment. In general, there was no conflict between environmental concerns and energy conservation objectives.

2. A long-standing partnership experience between the University and state agencies, including the Office of State Planning and Energy.

3. The existence of a multi-discipline UW-Extension structure which included a working affiliation with the UW System's 13 four-year universities and 14 two-year centers, plus an educational delivery system that was reaching a quarter of Wisconsin's citizens. Using a merged blend of the resources and delivery systems of the Cooperative Extension Service and those in a former University Extension (continuing education) unit, UW-Extension had for several years been incorporating energy-related information into programs for business people, engineers, farmers, health professionals, government leaders and environmentalists.

To assure citizen and organizational input in the pilot education program, and for guidance in granting State Energy Conservation Planning funds, the Office of State Planning and Energy established two key advisory groups.

First, a State Energy Conservation Advisory Committee was charged with guiding the pilot Energy Extension Service program and with helping OSPE establish priorities for funding other energy education and programming proposals from communities, organizations, and institutions. The Committee includes representatives from public interest groups, local governments, cooperatives, utilities, industry and the state legislative bodies.

An Energy Education Task Force was also named to design a long-range energy education plan for Wisconsin. It includes representatives from institutions and agencies with formal responsibility in education such as the Vocational, Technical and Adult Education Board, the Department of Public Instruction, UW-Extension, and the Office of State Planning and Energy.

Some of the specific WEES project components, their goals and some early success indicators follow:

A Statewide Energy Audit Training Project trains professional residential auditors who inspect homes to check energy conservation needs and offer counseling on how to pay for needed improvements. Training is also provided to ensure that prospective auditors are well qualified and use standardized audit procedures. The training program is helping the state's Class A utilities comply with a September 22, 1977 Public Service Commission order, requiring that utilities help inspect homes where owners have asked for assistance in determining energy conservation work or checking the quality of any work, such as insulation, which may have already been done. The program also trains architects, builders, mortgage lenders and installation and service workers. To date, 200 have completed the training series.

Energy Assistance for Low and Moderate Income Urban Residents provides energy conservation help to residents of the 170-block Harambee neighborhood in Milwaukee's inner city. The neighborhood has about 10,000 housing units and 30,000 low and moderate income residents. The project is aimed at those people who do not qualify for other types of aid. It provides free in-home counseling on energy conservation, a "do-it-yourself" training program to help homeowners cut the cost of remodeling and other conservation work, and other low-cost weatherization services to Harambee residents.

Demonstrations of Energy Conservation in Public Buildings is a project designed to work with eight communities, where public buildings are remodeled to cut energy waste, then opened to the public as energy conservation demonstration centers. University of Wisconsin-Milwaukee School of Architecture specialists are helping to evaluate the buildings and recommend the needed changes. Once improvements are made, educational information explaining the energy conservation measures and their impact on energy costs will be developed and prominently displayed in each building.

Energy Conservation in Hospitality Businesses focuses on the recreation and tourism industry which accounts for a quarter of Wisconsin's retail and service establishments and grossed more than $2 million in 1976. More than 90 percent of these are small businesses. The goal is to cut the energy used by these businesses 15 percent in three years. To do so, the program offers a series of energy conservation workshops around the state for restaurant, tavern, hotel, motel and resort operators. Workshop participants receive free, comprehensive energy conservation manuals designed for their particular type of business and are eligible for low cost, on-site audits by engineers. The project is helping business people identify needed improvements and determine how to pay for them.

Energy Conservation in Agricultural Transportation and Food Distribution is critical, since transporting agricultural produce accounts for 41 percent of the trucking in Wisconsin. Agricultural produce haulers in seven southwestern counties are targeted by this EES project. The goal is to cut their petroleum consumption by 10 percent annually. To do so, specialists provide personal counseling to farmers, transportation firms, small processors, feed mills, and grain exchanges. More than 1500 farmers and 110 firms are being contacted initially. Agricultural produce transporters are learning to cut energy waste by redesigning routes, eliminating empty backhauls or partial loads, centralizing loading and storage locations, improving packaging and storage facilities, improving equipment maintenance and purchasing energy-efficient equipment.

Safety and Efficiency in Wood Heating is providing educational information to the approximately 40 percent of Wisconsin's rural residents who are making some use of wood for heating purposes. Wood promises to become even more popular, both among country and city dwellers, as the price of other types of fuel continues to increase. However, there are a number of problems associated with wood heating: home fires; wood harvesting abuse; and the inefficient use of wood as a fuel. Consequently, the EES project has developed printed and audiovisual materials on wood-burning safety and efficiency, as well as woodburning courses to be offered by the state's vocational education system.

An Energy Information Center is staffed by media specialists who produce news releases, publications, audiovisual packets and other program support materials needed by the project directors. The center has developed a reference workbook for all UWEX county agents, established a speakers bureau, and publicizes workshops and conferences sponsored by the Energy Extension Service. It also acts as an information exchange center to promote maximum efficiency and effectiveness of media materials produced by cooperating energy-related agencies in the State. The Energy Information specialists publish a monthly newsletter and assist programming faculty in utilizing systems such as the UWEX Statewide Education Telephone Network and the state radio and TV networks.

There is a generous amount of energy information material being published by agencies, organizations, centers and other institutions. To help determine what information is most appropriate for Wisconsin

conditions, the Energy Extension Service administrative and information staff works with a UW-Extension faculty technical review committee to:

a. Review films, publications and other teaching and reference materials to assure that the information applies to Wisconsin conditions; and

b. Identify voids in programming materials and recommend new publications or audiovisual materials, if needed.

Much of the above material is designed to reach adults with a "how to" message for saving energy to save money.

Recognizing that a percentage of the State's citizens still don't believe there is in fact an energy shortage, some of the UWEX media and teaching materials now focus on motivational or attitude change copy. This is especially true for materials being developed for use in public schools.

The new Energy Extension Service remains flexible and programmers are gearing up for some adjustments as the pilot period ends.

The future looks encouraging. But the impact of energy extension education in Wisconsin will be determined by th degree of interest and involvement of the State's citizens—and th ability of educators and agency people to listen and respond to that public concern.

THE USE OF CONTENT/CONTINGENCY ANALYSIS IN EVALUATING PUBLIC HEARINGS

by A. P. Grima**

The past decade has witnessed dramatic changes in the role that the public may play in decisions relating to environmental management. There are now opportunities for a wide spectrum of the public to participate in many phases of the decision-making process and to offer their views on a broad range of issues. But just how is this public input to be analyzed? How are agencies to summarize and display the frequency, content, nature, intensity, and extent of public opinion so that it can be considered in making policy recommendations? The literature on the evaluation of public involvement is not well developed. This case study describes a technique for an objective assessment of the information generated from the public hearings on a controversial international issue—the regulation of water levels in the Great Lakes.

The Great Lakes are a unique international resource containing almost one-fifth of the world's fresh, liquid water. Like many other natural resource problems, the regulation of the water levels in the Great Lakes involves the resolution of partisan interests by a central agency. Partisan interests are likely to emerge in an economic-ecological system which is complex in nature and which plays such a crucial part in the economic and leisure activities of about 35 million persons. One in seven of the U.S. population live in the Great Lakes Basin, and three out of every five Canadians. One-sixth of the U.S. national income and one-half of Canada's national income was generated in the Great Lakes Basin in 1971 (I.G.L.L.B., 1974: 4,13). The International Joint Commission (I.J.C.) has the onerous function of moderating debate among competing publics and also of providing direction for action by the U.S. and Canadian governments. In order to discharge this function, the I.J.C. requires technical information on the hydrological-chemical-biological-economic system and information about what the various publics want.

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*The research for this paper was supported by a grant from the Rockefeller Foundation. The contribution of C. Dufournaud, C. Wilson-Hodges and G. Alpar, the research assistants for the project, is also appreciated.

**Dr. Grima is an Associate Professor in the Department of Geography and the Institute for Environmental Studies at the University of Toronto, Canada M5S 1A4. He teaches energy, natural resource and environmental management and his major research interests are conservation strategies for environmental planning and the evaluation of public participation programmes.

This paper outlines a method for coding and analyzing the presentations made at the 1974 public hearings held by the I.J.C. on the regulation of water levels in the Great Lakes. The content analysis was designed 1) to describe the participation by various groups in the hearing process (e.g., opinions expressed or absent); 2) to summarize on a uniform basis and in a retrievable form each presentation in the transcript; and 3) to provide data to test some hypotheses about the verbal behaviour of the different interest groups. This technique could be particularly useful to the members and staff of the numerous boards and commissions which have to administer as expeditiously and as fairly as possible the procedures for consulting concerned individuals and groups on many environmental issues. The technique could also be used by interest groups which may wish to assess as objectively as possible the extent to which the presentations made at public hearings are reflected in the report and recommendations of the agency or body holding the hearings.

The paper is divided into three parts. The first outlines the events that led up to the holding of public hearings in 1974. The second part of the paper describes the research design and the scope and the limitations of the analysis. Selected empirical findings comprise the third part of the paper.

The Public Hearings on Great Lakes Levels

In response to the low water conditions of 1964, the Governments of Canada and the United States referred the problem of fluctuations in Great Lakes Levels to the International Joint Commission (I.J.C.). The I.J.C. set up the International Great Lakes Levels Board (I.G.L.L.B.) to study the problem and make recommendations.

The I.J.C. traces its origins to the International Waterways Commission of 1905, replaced by the I.J.C. in 1909-10 when the Boundary Waters Treaty became operative. This international body has survived as a credible and useful instrument of international cooperation for almost seven decades and shows signs of becoming even more active as a result of the Canada-U.S. Great Lakes Water Quality Agreement of 1972.

One of the major roles of the I.J.C. is to investigate and make recommendations under Article IX of the Boundary Waters Treaty following a Reference from either or both governments concerning rights and obligations of the U.S. and Canada along the common border. The I.J.C. notifies the public of a Reference in order that interested groups or individuals may respond and submit pertinent opinions and information to the I.J.C. At the start of the study on the Reference, the public may make presentations; at the end of the study the I.J.C. shall hold public hearings in order to allow presentation of briefs on the report of the study. In this respect, the I.J.C. has been a pioneer in public participation in the policymaking process. In 1977 the I.J.C. extended the public consultation process by allowing the Reference Group established under the reference on Pollution from Land Use Activities to receive opinions from individuals and groups before the report of the study was completed.

Three sets of public hearings on Great Lakes levels were held by the I.J.C. The 1965 hearings were held during a time of extremely low lake levels. By the time the report was almost ready in 1973, the Great Lakes were experiencing extremely high levels once again and the flow of water at the Soo was reduced in response to an emergency application from the U.S. Government and expressions of concern from the Canadian Government. In March 1973 the I.G.L.L.B. produced an Interim Report that dealt with the issue of reducing flow at the Soo in order to provide relief for the lower Great Lakes. This Interim Report was the subject of public hearings which were evaluated by Grima (1976) and Sinclair (1975). In the fall of 1974 public hearings were held by the I.J.C. in 13 cities such that hearings were held in both countries and on each of the Great Lakes and on the St. Lawrence. This paper focuses on the 1974 set of hearings.

Public hearings are the major channel of communication between the I.J.C. and the public. They have three main purposes:

> First, they provide the people who are more closely or directly affected by decisions with the opportunity to be consulted or involved;
>
> Second, public participation programmes generate political support and legitimation; the I.J.C.'s recommendations to the Governments of Canada and the U.S. are likely to be strengthened if they are supported by the evidence presented at the public hearings or if the recommended policy is accompanied by arguments that adequately answer public criticism made at the meetings;
>
> The third, and most important, purpose for public participation is the opportunity it provides for opinions and comments about preferences, solutions and values that make the planning process more informed (i.e., to increase the amount and quality of information available to those who make policies and decisions). The next section describes one research approach whose purpose is to analyze and evaluate the public's input.

Analysis of Public Input

The analysis of public input aims to summarize and display the frequency, content, nature and extent of public opinion so that it can be considered in making policy recommendations. In the evaluation and coding of public hearings one could distinguish among four methods: intuitive analysis, simple tabulation, content summary, and content analysis (U.S. Forest Service, 1973: 10?).

Intuitive analysis is a subjective interpretation of public input. The analyst examines the input and develops a "feeling" about the public sentiment without any data or tabulation to demonstrate his conclusions.

Simple tabulation enumerates frequencies of a single characteristic of public input. This method adds an objective quality to the analysis, may be replicated and ensures that all input about the selected

variable is incorporated, but misses the important interrelationships of the identifiable variables.

Content summary paraphrases the substance of the input in précis form. The I.J.C. (1976) used content summary quite effectively to convey the essence and salient points of the transcripts and written submissions. The major shortcomings are the lack of detail and the lack of quantitative indications of frequencies (e.g., number of participants agreeing with the Report's recommendations) beyond vague terms such as "many" or "some" or "others".

Content analysis aims to quantify public input in tabular form as well as to provide a summary of the characteristics of the participants and their opinions. Content analysis aims to be systematic, objective, replicable and comprehensive; it also stores data in a retrievable form. This method is flexible: it can handle enormous volumes of public input on complex issues; it could be used to obtain frequency tables or summaries of individual presentations as well as to provide data for testing hypotheses by means of contingency analysis.

Research Design

The initial step in the analysis was to define the nature of the research problem in operational terms; viz., to compile a list of questions which needed to be answered from the input. These questions were chosen in order to facilitate the summary and description of the presentations and the testing of some underlying hypotheses. In this way, one selects categories for coding data. This is the critical step of the analysis and involves the conscious selection of the relevant from the not-so-relevant; the arbitrary choice is, however, somewhat circumscribed by the fact that the coded data have to reflect adequately the expressed views of the participants.

Once the coding sheet is drawn up, the bias of the reader is removed; the coder has no choice except to record the presence (or absence) of a category (e.g., Lake Superior referred to or not referred to). Therefore, content analysis is an effective technique to code the information in the presentations on a uniform and consistent basis and it also yields numerical data which may be subjected to contingency analysis (Holsti, 1969).

Content of Presentations: Selected Findings and Discussion

Selected findings from the 1974 hearings were reported in Grima and Wilson-Hodges (1977); the focus in that paper was on the affiliation of the participants. The main finding was that federal/state/provincial government participants exhibit consistently and significantly different verbal behaviour from other actor groups, viz. municipal governments, private associations and individuals. The former groups emphasize solutions to a greater degree, show more sympathy for the I.J.C. and acknowledge more often the benefit from its activities. It was also found that most participants were concerned mainly about

one lake or stretch of lake; local interests have to be reckoned with even if the system-wide plans yield higher benefits for the whole region.

Major Concerns of Participants

In the present paper, the focus is on the major concerns or interest of the participants. In the 1974 hearings there were 250 presentations made and five major groups of concerns emerged (Table 1). Due to limitations of space, it is not possible to discuss all the findings on the major concerns reflected in the presentations. Instead I would focus upon two basic questions in order to exemplify the use of content/contingency analysis. In a vast region such as the Great Lakes Basin, the number of hearings has to be limited; if the number of hearings is small, is this likely to "freeze out" major concerns? Do the principal actor groups that take part in public hearings tend to speak on behalf of discreetly different concerns or interests? Objective answers to such questions would help in planning more effective public hearings in the future.

TABLE 1

CONCERN OF PARTICIPANTS OF 1974 HEARINGS

	Concern						
City	Riparian	Ecological	Power/ Navigation Industry	Ecological Riparian	Riparian/Industrial	Other Combinations	Total
Chicago	7	0	0	2	2	3	14
Cleveland	20	3	1	2	0	4	30
Detroit	3	3	0	5	0	3	14
Duluth	35	5	6	5	3	4	58
Green Bay	13	1	2	2	2	1	21
Hamilton	13	0	0	1	1	4	19
Milwaukee	9	0	2	0	0	1	12
Montreal	4	0	0	1	0	0	5
Muskegon	8	0	0	1	0	3	12
Owen Sound	8	0	0	0	4	0	12
Rochester	17	1	0	3	0	4	25
Sault Ste. Marie	4	8	2	2	0	3	19
Thunder Bay	5	2	1	1	0	0	9
	146	23	14	25	12	30	250

Chi-square = 112.07 df = 60 α = 0.0 C = 0.55 (does not meet criterion of $f_e \geq 1$ in all cells)

Number and Location of Hearings

In total, each type of concern was relatively well represented. The industrial-power-navigation interest group combined with the riparian-industrial accounts for 26 (or 10.5 percent) of presentations and the ecological interest group (by itself and in combination with riparian interests) accounted for 19 percent of all presentations. The dominating position of the riparian interest at the 1974 hearings reflects the extreme high water levels of 1973-74 and the widespread damage sustained by lakeshore interests in 1973 and 1974. Riparian interests were well represented at all cities but the coverage for other interests is more spotty. For example, ecological interests were completely absent in Milwaukee and Owen Sound. The power-navigation-industry concern was not represented at Detroit, Montreal, Muskegon and Rochester. The low profile of this latter interest group is best explained by the fact that, at a time of high water levels, this interest group did not feel sufficiently threatened by the final report of the I.G.L.L.B. and therefore did not turn up at these meetings.

Table 1 suggests that the location of a public hearing is very strongly associated with the salience that different major concerns are given at a hearing. For example, five cities (Cleveland, Duluth, Green Bay, Hamilton and Rochester) generate over two-thirds of the riparian presentations. These were cities in regions which suffered substantial flooding and erosion in 1973 and 1974 (e.g., Cleveland) or which felt threatened by the recommendations in the I.G.L.L.B. report (e.g., Duluth). This significance of the location of a public hearing was also found in the analysis of the 1973 hearings (Grima, 1976: 44-51) and reinforces the need to hold hearings in as many locations as possible in order to reflect as many concerns as possible.

The Affiliations of Actor Groups

The contingency table of affiliation and concern indicated a highly significant association between these variables (Table 2), suggesting that the principal actor groups tend to speak on behalf of discreetly different concerns or interests. Power, navigation and industry were most often represented by private associations or municipal governments. The higher levels of government in particular repeatedly omitted any acknowledgment of these interest groups. On one hand this result is surprising when "the economy of the basin is basically industrial," as the I.J.C. Report (1976: 9) puts it. On the other hand the industry, power and navigation interests probably did not feel sufficiently threatened by the report and chose to keep a low profile, particularly since the high water levels of 1973 and 1974 favoured them. The elected representatives and government officials have a vested interest in emphasizing the damages suffered by the households (and voters) in their jurisdictions. Since actor groups tend to speak on behalf of particular interests and express particular concerns, it is important to minimize the costs to participants of public participation (e.g., by holding hearings at more locations and in the evening) in order to enhance the representative nature of the consultation process.

TABLE 2

INTEREST (CONCERN) AND AFFILIATIONS OF PARTICIPANTS

Interest	Affiliation: Private Assn.	Private Individual	Federal Gov't.	State/Prov Gov't.	Municipal Gov't.	Total
Ecological	12	5	2	3	1	23
Riparian	45	55	14	11	21	146
Ecological/Riparian	8	4	4	4	5	25
Riparian/Industry	5	1	0	0	6	12
Power/Navigation/ Industry	8	2	1	0	3	14
Other	9	5	3	6	7	30
Combinations						
Total	87	72	24	24	43	250

Chi-square = 36.708 df = 20 α = 0.013 C = 0.358

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THE Acorn GROUP, GOVERNORS STATE UNIVERSITY

by Bethe Hagens**

Don't take this contribution lightly. By the author's own admission, it is full of "buzz-words"—"old boy network," "appropriate technology," "competency-based education," "politicization of energy." But this may just be a report on the most imaginative environmental-education-in-action project in this book. At any rate, here is the diverting account of a non-traditional multi-media assault on traditional community values stemming from a non-traditional voluntary group associated with a non-traditional state university out in the traditional cornfields south of Chicago. Read, and enjoy!

The Acorn Group* is hardly a typical environmental action effort, especially since our home base has been in a state university and since advocacy, as it is popularly understood, isn't exactly legal in that context! Rather, as a group of students and faculty in an experimental, competency-based university, we have been primarily concerned with creating communication environments that will stimulate "old boy network" types of cooperation among people who might ordinarily not have even heard of each other. Our most intense efforts have been focused upon the six-state area known in Federalese as "Region V"—Illinois, Indiana, Minnesota, Michigan, Wisconsin and Ohic. What we've tried to do, over the past four years, is to maintain coverage and share information about people, groups and policies in our region that have an impact on our areas of interest:

—alternative sources of energy and resource efficiency, which produce

—jobs, satisfying work, and equity, within the context of

—the land, water, air and the creatures of the Earth.

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*We began work as the Midwest Energy Alternatives Network (MEAN) but soon found that title too cumbersome (and the acronym not particularly appealing!). Our choice of "Acorn" was the culmination of a long search for a natural metaphor that could help the group keep sight of its basic philosophical commitments. . .from little acorns. We are not affiliated with ACORN, the Association of Communities Organized for Reform Now, and use our "Acorn" with the friendly acknowledgment that they hold trademark rights on the name.

**Dr. Hagens is Professor of Anthropology in the College of Environmental and Applied Sciences, Governors State University, Park Forest South IL 60466. She is co-editor of Acorn magazine, with research interests in energy policy, community development, and appropriate technology. Recently Dr. Hagens was appointed to the Board of Directors of the Washington-based Center for Renewable Resources.

The process of doing this has involved publishing a monthly newspaper (Acorn), sponsoring a mammoth regional appropriate technology forum, setting up a resource library and person-to-person contact mechanism, coordinating a "by trial and error" model project in metropolitan cooperation, producing media materials, and learning to serve as responsible regional representatives for "our" network in state and federal bodies that seek our advice. Strong stuff for folks in an unknown, ten-year-old university out in the cornfields south of Chicago!

It's often a surprise to our network friends that a project as diverse and freewheeling as Acorn originated in a university, and it's perhaps equally ironic to us that the university is seriously considering changing some of the internal policies and structures that have enabled us to do our work. Our networking has consistently been inspired by the mandates of Governors State: to reach out to low and moderate income citizens, recognizing the special abilities and perceptions they will have cultivated by reason of life experience and cultural heritage, and assist them in creating satisfying careers for themselves that will grow from their personal histories and enhance their feelings of self-respect. In order to achieve these goals, Governors State has operated without grades, without strict timelines on completion of coursework, and on a "competence" base. The latter is the heart of the system. Classes, degree programs, and even colleges within the university are phrased in terms of competencies—what the student will be able to do as a result of having taken classes, completed degree work, or graduated from a particular college. Either a student can or can't do something. If she/he can, non-graded credit is awarded. If not, it's simply assumed that the student is somewhere in the process of learning and will ultimately master the competency. Since competencies are phrased in generic terms, students are really limited only by their imaginations in determining how they will demonstrate that they have achieved them.

This academic situation has created a truly remarkable atmosphere at the university. Our average student age is about 30, and many of them are Vets, mothers returning to school, professionals seeking to upgrade their positions with advanced degrees, career veterans who have no previous college degrees but want to pursue the intellectual life as they begin the transition out of "middle age," drop-outs from more traditional institutions, and bonafide "ordinary" young people who find the school's low tuition attractive. The potential is staggering and demands a great deal of openness, trust, and bravery on the part of both students and faculty to attempt to live up to the university mandates.

The biggest problem at the school has been designing a system of motivations and rewards that will recognize excellence without grades. The Acorn Group is one attempt to deal with this problem while at the same time introducing students to real career options, accomplishing model projects in communications for human/environment planning, optimizing the role of the non-prestigious university in promoting community development, and getting quick criticism on ideas and projects from a range of so-called "experts." We have found repeatedly that people competent to solve particular energy alternatives problems are neither uniformly credentialled nor employed. We find many similar approaches

to problems across occupations, disciplines, and socio-economic strata. Our goal is to learn to recognize excellence and to communicate it, either through person-to-person visits, the newspaper, workshops, or in other media. Ideally, our students have their work evaluated out in the "real world" and come away from the university valuing competence wherever it is in evidence. They seem to value the fact that the university is a place to pursue an intellectual experience that can make life more interesting.

I have digressed in speaking in such great depth about competence and Governors State, and yet, creating a similar atmosphere of acceptance has been our action goal in terms of the Midwest. After the politicization of the energy situation in this country began to manifest itself in Energy Departments at virtually every level and in every sector of this country, we began to take a look at the emerging demand for information about energy alternatives and "self-reliance" and wondered how knowledge about these things was currently structured in the Midwest. Mother Earth News, like Organic Gardening, perhaps, had clearly created "one-shot" heroes—people who made solar collectors for $29.00 and 6500 beer cans, ladies who grew six-inch tomatoes and fought cut-worms by training household pets to snack on them. I'm being facetious, but it has been our belief that there is a great deal of systematized expertise to be found in the various cultures and age groups of our region as regards energy. This knowledge is equally as sophisticated as that produced in prestige situations that demand an entrance fee (i.e., credentialling cost) of perhaps as much as $50,000. If energy alternatives remained the exclusive territory either of research labs or the greater southwest, we feared that the social problems that our centralized energy economy has created would be that much the worse. We would be duplicating a centralized, rather stale but supposedly "sure" approach to supplying our country's energy needs.

The best way to counter this centralization, we felt, was to "network" —a now overused, but still useful, term that refers to getting out and making personal connections and passing them on. Our first attempt was a small fair at Governors State that got us in touch with a small group of students willing to work on a newsletter.

With $750, an office, 20 percent of Hagens' faculty time, and mailing and phone charges put up by the College of Environmental and Applied Sciences, we began publication of Acorn. Early issues of the paper were prepared bimonthly and were clearly an attempt to present anything we turned up in an inexpensive but hopefully appealing graphic format. The students working on the project collected names of people and groups who conceivably might like to receive sample issues of the paper, and we canvassed other staff at the university for their suggestions about policymakers and academic sub-groups who might be interested in joining the dialog. Naturally, we became very attached to our early subscribers, there being slightly under 500 in our first year, and we sent reader reply forms to each of them. Many wrote back long and enthusiastic letters, some called, and still others came to visit. The Acorn Group began to travel—to conferences, exhibits, meetings, briefings, homes, offices. Ever so slowly, we felt a vocabulary beginning to develop.

The culmination of our earliest efforts was "Live from the Midwest," a conference held in March of 1977 in Chicago that attracted almost 2500 people from around the midwest who were anxious to hear our keynote speaker E. F. Schumacher and to talk to each other about "appropriate technology."

By now, "appropriate technology" has become such a buzz-word among the in-group that it has been trivialized. Other people find it a meaningless concept. We find it a workable policy handle. At any rate, in early 1977 Schumacher's best seller Small is Beautiful had just begun to bask in warm media attention, and concepts and definitions were up for grabs. "Live from the Midwest" was a humanities project (we received about $13,000 from the Illinois Humanities Council and matching money of just over $26,000 from Governors State) designed to create, "live," a policy language for appropriate technology.

One of the best definitions around (we think) comes from one of our students who also happens to teach industrial design at Southern Illinois University in Carbondale. Rich Archer says that "Appropriate technology (AT) does not mean back to wash boards and dirt roads. What AT does mean is taking the best scientific and technical information and translating it into easily understood technologies that can be utilized within local communities. These technologies utilize low capital investments, local labor skills, small-scale industry and renewable energy resources. The main purpose of AT is to make people and communities more self-reliant. If necessity is the mother of invention, then AT may well be her firstborn. AT is striving to once again revive American ingenuity to replace the dependence that many people feel on large-scale technologies and institutions which have not met their needs."

With this definition more or less in mind, we used Acorn to invite individuals and groups to help us plan the Schumacher visit to Chicago. The response to the invitation was most astonishing in its diversity. It can now be seen in the categories that we ask our subscribers to use in describing their interests and specialties. These include:

-Food production and distribution (organic gardening, cooperatives, nutrition, eco-agriculture, processing, marketing, greenhouses, etc.)

-Alternative energy technologies (solar, wind, biomass, water, conservation, recycling, waste management, appropriate technology)

-Simple lifestyles ("new age," homesteading, self-reliance, peace and conflict resolution, humanistic psychology, "back to the land")

-Publications and Media (newsletters, columnists, film and video experience, radio networking, ham and C.B.)

-Education/Entertainment (environmental education, traveling theatre, teaching, comedy, workshop coordination, speaking)

-Social justice (ethics, religious and philosophical bases of appropriate technology, corporate responsibility)

-Small business/new economics

-Community Action and Organizations

-International Issues

-Health

-Advocacy and policy

There were conference participants as well as members of the planning committee from all of these areas.. The result was a smorgasbord, rich and sometimes sloppy, that brought what we've come to think of as "the network" into face-to-face interaction for three days of ritual celebration. It seems, in retrospect, to have created the visibility that we needed to secure 1978 funds to continue publication of Acord ($10,000) from the newly created National Center for Appropriate Technology. We also discovered some months later that rather than just breaking even on conference costs, we had gained not only a few more wrinkles but also about $3,500. The Illinois Humanities Council accepted our proposal to use this money to make a 16-mm. color film, Sunny Side Up: Appropriate Technology in the Midwest. It was produced by Jim Laukes, a former student who has gone on to become a professional film and television producer while retaining his functional role as co-editor of Acorn.

The film is our first attempt to produce a piece of very entertaining, broadcast-quality footage that should attract the interest of more of the "general public" in the network and in the products and services it encompasses on a very loose and non-formalized basis. The decision to reach outside the "old boys network" is one that most everyone, insider or critic, feels is necessary. The "market" for the expertise we have identified currently needs to be catalyzed. Probably the implicit belief is that once "AT" and "energy alternatives" have a real market, we will begin to have test results—many more of them. And we will have the beginnings of a mechanism to evaluate in yet another context the skills (read competencies) being claimed around the region.

In our own Chicago metropolitan region, we have begun work with a small rural community about 30 miles south of the university. It is a classic "poverty area," all Black, and eager to explore possibilities in energy alternatives, local economic development and food production. We are also working with a high-rise, low-income Black housing development in Chicago on a youth recreation project that has enabled thousands of young people to visit and do gardening at the rural site. In the process, the children have mixed, taken vegetables home to help supplement the family income, and have helped in the construction of a large community solar greenhouse. The Acorn Group received no funds for this project—all were given "in kind" as an outgrowth of ongoing programs that needed more specific focus. In the process, more than ten regional groups (including Robert Taylor Park, the Chicago Department of Human Services, the Kankakeel and Community Action Program, the Pembroke Growers' Co-op and Pembroke Township, Governors State, the Cooperative Extension Service, the Chicago Circle Campus of the University of Illinois, and the Church of God in Christ) cooperated, many for the first time. The result has been exactly as anticipated: the

Growers' Co-op is breaking off from the Community Action Program to become a free-standing venture in its own right, with a new solar greenhouse as one of its most prominent assets. New programs between the two communities involve more sophisticated youth exchange programs, training in solar ideas for the city, and an oral history project being developed under a planning grant from the National Endowment for the Humanities. In short, after all the effort, things are beginning to roll all around the region and the "old boys" look forward already to chances to get together as friends.

Apart from the friendships, it is difficult to evaluate the real success of our efforts. At a recent meeting of our regional advisory committee, there was mutual consensus that the climate for solar and appropriate technology in the region had very definitely improved over the past year. We have assumed that we are in part responsible. Still, the thorn in the paw is the issue of competence and its relationship to the economic realities that currently structure the marketplace. Governors State is probably going to abandon competency-based education. This is done with the belief that such a system is workable only in a sophisticated, motivated student body. What strategy the network, and Acorn as a communications system for it, will devise is still unclear. We want to promote economic development among ourselves, for the products we feel confident about, yet we are unclear how to create a market for conservation techniques and tools in a consumer society. We are unclear about ethics in market creation. Perhaps the biggest barrier is the fact that we have tended to see "Appropriate Technology" as developing from "appropriated" monies rather than crafty sales pitches. Our faith lies in the individual, in his or her community context. We feel that this is the level in which competence and quality can be most clearly judged, and we will be targeting our communications activities in this direction in the future.

CENTRAL NEW YORK ENVIRONMENT, INC. — A REGIONAL PERIODICAL FOR INFORMATION EXCHANGE

by David L. Hanselman*

Conservation and communication in America have been for many years symbotic. When Gifford Pinchot set about staffing his embryo U.S. Forest Service in 1898, the first crewman he hired was not a ranger but a writer. Support for the emergence of the Forest Service itself had been engendered in part by enterprising newspaper reporters exposing the excesses of the lumber barons of the day. So now that environmentalism has succeeded conservation in the public ken as the touchstone of resource management, communication continues to be the handmaiden of the movement. While national media dominate the scene, it is frequently local or regional publications that really energize public participation in resource management decision-making. This is a case study of one very effective example of grassroots environmental communications—Central New York Environment, a rallying point for those having environmental interests in that area.

As a result of having read it, 16 percent reported they had attended a meeting, 28 percent had contributed time or money, 52 percent had recommended an article to someone else, and 20 percent had contacted a legislator. "It" is Central New York Environment, a 12-page newspaper published six times a year that reaches an estimated 15,000 people in Central New York.

In its three-and-a-half years of existence, Central New York Environment(CNYE) has developed an enviable record in communicating environmental news to professional and management people, legislators, and those actively interested in environmental affairs. Readers have come to depend on this publication as an accurate indepth source of information on environmental issues and things of interest not found in other local publications. Most amazingly, CNYE is self-supporting through subscriptions, advertising and modest grants which all have come from within the communities served.

The roots of CNYE go back to 1972 when a single individual, Mrs. Marion Bond, saw the need to develop a newsletter on environmental issues for leaders of local organizations and local legislators. For two years she sifted through technical and legislative literature and published a digest which gave succinct coverage in easily understood language. When her husband retired and they were about to move to another community, Mrs. Bond encouraged environmental

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*Dr. Hanselman is Associate Professor, Environmental Education/Communications, State University of New York College of Environmental Science and Forestry, Syracuse 13210. He has special interest in nonprint media communications to effect environmental education.

interests in the community to continue the effort. A new organization, CAPE (Coalition Advocating Protection of the Environment) picked up the task and published CAPE Alert. CAPE leaders sought to get the Environmental Management Councils and regional environmental organizations (Audubon, Sierra Club, sportsmen groups, etc.) to consolidate their efforts and publish a single area-wide newsletter. While virtually all agreed that there was need for such a periodical on environmental issues, consolidation was not to be achieved. There were two reasons: First, CAPE was a politically active coalition which took vocal stands on various issues, but many thought that objectivity and, hence, acceptability by many sectors of the audience to be reached would be damaged by association with an overtly activist group. Secondly, most environmental organizations either found that they were required to publish an independent chapter newsletter or were otherwise reticent to give up their own periodicals. Thus, while there was widespread support for a new regional environmental newspaper, it became unrealistic to think in terms of such an effort absorbing existing newsletters.

Because of its sometimes controversial nature, the leaders of CAPE then fostered creation of a separate entity for publication and Central New York Environment, Inc. was launched with the specific purpose of publishing "...a newspaper dedicated to responsible, objective and authoritative reporting of environmental news; a forum for communication and education amongst interested citizens in Central New York." The first issue came off the press in June, 1975.

The first year CNYE attempted to publish a monthly eight-page paper. But funding was very restricted and by the summer of 1976 the future looked bleak. At that time, Mrs. Karen Slotnick took over as editor, new sources of funding were sought, and the present six-issue, 12-page format evolved.

The leadership of CNYE has, since inception, cut across many interests within the community. Serving on the Board of Directors have been college faculty, the past president of the League of Women Voters, chairperson of the local Sierra Club, advertising and sales promotion supervisor for Carrier Corporation, administrative assistant to the Mayor of Syracuse, city and county legislators, manager of an Allied Chemical Corporation division, secretaries, school teachers, and homemakers. The diversity brought credibility, and credibility brought strength to the publication. Readership analysis has shown that many who are far from "active environmentalists" look to this newspaper as an objective and factual source of information.

But all stories aren't about hard issues. While the lead article of the summer 1978 issue concerns the controversial Winter Navigation Demonstration for the St. Lawrence River, an inside story is titled "Have You Met a Mushroom Today?" In the same issue are articles on the Sierra Club's challenge of the nuclear industry, returnable bottles vending machines, the honoring of a local environmental leader and the story of Agway's (an eastern farmers' cooperative) energy research program. Under "Letters to the Editor," New York State Department of Environmental Conservation Commissioner, Peter A. A. Berle, answers questions concerning mirex pollution of fish in

Lake Ontario. The same issue contains 22 photographs and three drawings. A popular feature of each issue is the Environmental Calendar listing conferences, hearings and special events.

Staying financially solvent has been a continuing effort for the CNYE Board. Largest single cost is printing. This has averaged about $750 for 7500 copies of the 12-page paper. The editor is paid a very modest $200 per issue. Postage and other miscellaneous expenses run about $150 for a total of $1,100 cost per issue, or about 15 cents per copy.

Total annual budget has increased from $3,400 in 1975 to about $6,000 in 1978. Forty-six percent of the income is derived through advertising, 30 percent through subscriptions and 22 percent from grants and donations. Policy limits advertising to less than 25 percent of space, and products and services advertised must meet Board approval. Representative of advertisers is a company which installs insulation, a restaurant, a store selling wood stoves, a farm produce market, and an outdoor recreation equipment store.

Donations and small grants have come from individuals, organizations (Junior League, CAPE, Audubon) and the business community (Agway, Allied Chemical, Carrier Corporation). No grant has exceeded $600. Paradoxically, many believe that the continued existence and success of the organization is due in no small part to its lean budget and its total income being derived from within the community it serves.

Experiences of this publication and others like it have shown that regional special interest journals can rarely be sustained by subscription only. The current subscription rate is $5.00 per year (six issues) for individuals. Several organizations and Environmental Management Councils are buying in bulk and, in turn, distributing to their membership. Complimentary copies go to local libraries, schools and legislators, directors of public agencies, and hospitals.

Between 7000 and 8000 issues are being printed and a readership analysis has found that each issue reaches an average of 2.1 people. About half of the readers get their copy through direct subscription; the other half are reading complimentary or group-purchased copies. In a study conducted by the Syracuse University School of Management, it was found that 58 percent of the respondents are professionals, 93 percent of whom rate themselves as either "very" or "mildly" interested in CNYE. Eighty-four percent of this group had read one or both of the two latest issues. Readers report that energy articles are of greatest interest, followed by information on current issues, physical health features and helpful hints. Even the advertisements claimed more than 50 percent readership interest. Asked what they would like to see in future issues, readers asked for more pro-con controversial issues and more information on legislative hearings or pending legislation. They also expressed interest in knowing more about environmentally-sound products and services and in seeing more technical articles. The study clearly documents the success of CNYE in reaching the "thinkers" and "doers" in Central New York. As noted above, readers are frequently prompted to attend meetings, to contribute time or funds, contact legislators or in other ways become involved.

Difficult as it is to maintain any environmental education activity without the infusion of government funds, CNYE has survived. Its four-year existence is, in itself, testimony to its success in meeting a community need. In September, 1976 New York's new Commissioner of the Department of Environmental Conservation chose an invitation from CNYE for a reception to make his first official visit to the area. Business, government and other community leaders were brought together in an open environment to meet the new Commissioner.

In March, 1977 CNYE was one of four groups cited by the Environmental Protection Agency for "...objective reporting that has linked people in business and industry, government service and private citizens." Parenthetically, reporting of this event underscores the continuing need for CNYE. A dinner was scheduled at which the four awards were presented. CNYE invited the local press and sent out a press release concerning the awards. Both Syracuse newspapers chose to delete mention of CNYE from their stories.

And what of the future for CNYE? Two continuing challenges will undoubtedly prevail—funding and increasing readership. The editor and board hope to return to monthly (instead of bimonthly) publication and to move from 12 to 16 pages. Because of its high degree of credibility in the region served, CNYE is in an excellent position to sponsor seminars and forums on related issues. Such activities are being planned.

Editor Karen Slotnick hopes to foster better communications with other editors and boards of local environmental newspapers. Ideas that work should be shared. She hopes that a national conference of editors and publishers may be convened.

As this chapter goes to ERIC editors, a new issue of CNYE is rolling off the press. Scheduled to arrive just before election day, it will carry responses to questions of environmental concern made by local political candidates. There is a follow-up story on winter navigation in the St. Lawrence River and a hard-facts story about the economic realities of recycling. There's a story about maple tree diseases and another dealing with food and nutrition plus news from the local Environmental Management Councils.

If past experience holds true, about 15,000 people will read the issue and, most importantly, act on what they learn. CNYE is grassroots environmental communications at its best.

GUNNISON ISLAND—SANCTUARY FOR WHITE PELICANS

by Florence R. Krall*

Once upon a time a small island in the northwestern portion of Great Salt Lake held a remarkable breeding colony of white pelicans. Then the ravages of civilization took their toll. But today the pelican population is maintaining itself at a stable level, the third-largest colony in the country. The stability is not due to chance but to the persistent efforts of scientists, conservationists, and interested citizens who have constantly sought wildlife refuse or sanctuary status for Gunnison Island. While no happy ending is assured, this case study offers a prototype of citizen involvement in environmental education over four decades.

During the fall and winter the Island is bleak and empty, but in March and continuing until September, it pulsates with one of nature's mysterious phenomena. The Island is Gunnison Island, a small island in the northwestern section of the Great Salt Lake. The biological phenomenon is the breeding of the white pelican, Pelicanus erythrorynchos.

Since Captain Howard Stansbury and his survey crew first set foot on the Island in 1849, the dramatic events associated with the breeding and reproduction of the White Pelican have captured the curiosity of scientists and plunderers alike and contributed, at one and the same time, to forces of preservation and extinction. To appreciate and understand the present plight of this majestic bird and the problems complicating efforts to create a sanctuary for Pelicanus on Gunnison Island, one must look briefly at its unique natural history and its historical tracings on this island in the Great Salt Lake.

Natural History

Except for the periodic interruption of the breeding cycle by man or nature, Gunnison Island with its barren Mississippian limestone and sparse vegetation has provided a near-perfect site for the nesting of the White Pelicans for hundreds, and possibly thousands, of years. The gregarious pelicans nest and raise their young in dense, communal colonies on the island. The females lay their two eggs on the bare ground in depressions or heaped-up debris. Both sexes share incubation, brooding, shading, and feeding tasks.

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*Dr. Krall is Associate Professor, Department of Education, University of Utah, Salt Lake City 84112. Her major teaching field is environmental education; among her research interests are effects of environmental experiences (in natural settings) on personal and ethical development, and ethno-ecological studies. She is President of Utah Audubon Society.

Unlike most other birds, the pelicans are practically voiceless and non-aggressive. Their passive and communal tendencies make them easy prey. Thus isolated Gunnison Island provides an ideal habitat free from mammalian predators that could threaten the colony.

The Great Salt Lake, because of its extreme salinity, contains no fish; however, Gunnison Island is within flying distance of fresh water marshes where the White Pelicans forage for carp, their main supply of food. A single bird may fly from 80 to 100 miles each day in search of food. The young feed by inserting their heads into the gullets of adults. Despite the care and feeding given the young, mortality rates of the young approximate 50 percent.

The greatest threat to the White Pelicans is disturbance by man. Unlike the Brown Pelican, the White Pelican has not yet shown reproductive decline due to DDT. Direct human disturbance and habitat deterioration provide the greatest threat to the White Pelican (Lies and Behle, 1966).

The pelicans are especially susceptible to disturbance during nesting, the month-long incubation period, and the first weeks after emergence of the young. If disturbed at these times, the adults may abandon their nests completely or remain away for several hours exposing eggs or young to sun, chilling, or seagull predation.

In 1971 the White Pelican was placed on the list of protected species of North American birds by an addition to the Migratory Bird Treaty. The White Pelican colony on Gunnison Island is the third largest in the United States. Colonies at Chase Lake in North Dakota and Pyramid Lake in Nevada are the only colonies that surpass the Gunnison Island colony in numbers.

The colony on Gunnison Island is the largest in the Rocky Mountains and produces 90 percent of all the young in this region. Two small colonies of about 300 adults are found at the Riverside Reservoir in Colorado and on the Molly Islands in Yellowstone Lake (Sloan, 1973). Recent studies of the birds show the population to be stable at about 5200 adult birds producing about one-half that number of young each year (Knopf, Low and Behle, 1975). According to Edwin J. Rawley of the Division of Wildlife Resources of the State of Utah, although the population on Gunnison Island is comparatively stable, it represents an ever-increasing percentage of the total number of White Pelicans in the United States, the total number showing a steady decline.

History of Disturbance

White man's first documented intrusion on Gunnison Island occurred in May, 1849 when the Stansbury Survey occupied "Pelican Island" for a brief period. Nesting of gulls and pelicans was at its peak and the crew took advantage of the situation by plundering eggs and birds for food (Morgan, 1973).

In November, 1895, the "dream of solitude" brought the first resident, poet/artist Alfred Lambourne, to the Island where he lived for 14

months. With the help of friends, he built a hut and after a winter of "silent, implacable days," witnessed a sudden surge of persons showing interest in his island home. He wrote:

> Suddenly this island has become important. Short the time, since for the asking alone, the place had been mine. Now, as if it had become an actual beehive, a monster and animated emblem of the state, Science, Commerce, Agriculture, Education, "Ars Militans," I might add, are contending for it—the corporation with millions of dollars, the private company, the individual, the state, each makes a claim. There have been Government surveys, railroad section surveys, local company and private surveys. There have been issued a government grant, the Desert Entry, the Homestead Entry, and the Mineral Claim. A coveted prize this island must certainly be (Morgan, 1973).

In March, he was joined by guano sifters who built a cabin and stayed on the Island until autumn when they left him to another winter of solitude. After 14 months on the Island, he returned to Salt Lake City where on February 9, 1897 he filed an application for a homestead. However, "suit was brought to void the homestead entry on the grounds that the land was mineral rather than agricultural" (Morgan, 1973). The Island had been acquired by a mineral patent to the Central Pacific Railroad in 1896. A placer mining claim was issued in 1903 on part of the island (Christensen, 1977). Although the production of guano has never been lucrative, the conflict between the pelicans and the potential mineral wealth upon which they build their nests began with the guano sifters and persists to this day.

Since the occupation of the Island by Lambourne and the sifters, no long-term residents have occupied Gunnison Island; however, human disruption of the rookery has continued. In 1918, several thousand pelicans were shot or clubbed by sportsmen sponsored by the Utah Fish and Game Department because of the pelican's detrimental effect on the sport fisheries surrounding the Great Salt Lake (Morgan, 1973). Although this myth has been dispelled among many sport fishermen in this region (pelicans feed mostly on "trash" fish such as carp that are not valued for prime sport fishing), the pelicans continue to be shot by Mexican fishermen as they migrate south in the winter.

Another major threat to the White Pelican on Gunnison Island has been drought. In 1935, hundreds of pelicans died of starvation when fresh water lakes and marshes supplying their source of food dried up (Behle, 1958). The fluctuation of the lake level caused by drought or abundance of water has created additional menaces. When the lake level drops markedly, as it appears to do cyclically every decade or so, a land bridge forms between shore and island and mammalian predators then find natural access to the island. During the drought of 1964, the land bridge provided access for hunters and cyclists and interference with nesting resulted. Although flooding due to high lake levels has not created recent problems in nesting, the pelicans may not have nested on the island in the early 1870s when levels of the Great Salt Lake were higher than normal (Knopf, 1974).

Disturbance by humans has not been confined to sportsmen. Oologists, in the early 1900s, and bird collectors have created their share of disruption. A 1972 helicopter accident on the Island involving collectors caused the abandonment of over 100 nests. The 40s and World War II brought the threat of using the island for bombing practice. More recently, low flying planes from Hill Air Force Base have caused disturbance.

Citizen Intervention

Despite the disturbance of the breeding of the White Pelican for over a century, the population today is maintaining itself at a stable level. This stability is due not to chance but to the persistent efforts of scientists, conservationists, and interested citizens who have constantly sought wildlife refuge or sanctuary for Gunnison Island.

Expeditions by scientists from the University of Utah began as early as 1886; however, it was not until 1932 that a complete survey of the island was conducted by William H. Behle, professor of zoology at the University of Utah (Behle, 1958). Behle (1935, 1936, 1944, 1958), now retired, has continued his studies until the present. Since the early 1900s when he began urging the Department of Interior to acquire Gunnison Island as a wildlife sanctuary, he has been a major force acting for the preservation of the island.

In the early 70s, F. L. Knopf, then a doctoral student at Utah State University conducting a study of the White Pelican, began focusing on the plight of these migratory birds. As a result of the interest kindled by Knopf, the Gunnison Island Committee, an ad hoc committee of the Utah Audubon Society was formed in the fall of 1972. The voluntary committee, composed primarily of interested Audubon members, began formulating strategies for, first, the proper management of the White Pelican colony by the State of Utah and, secondly, the establishment of refuge or sanctuary status for Gunnison Island. The committee held regular luncheon meetings to formulate plans and prioritized tasks. William H. Behle, Fritz Knopf, and Dr. Harold Lamb, member of the board of the National Audubon Society, were members of the committee throughout and provided invaluable guidance and expertise.

The committee agreed that the citizens of Utah, a state with an extremely conservative constituency with mistrust for governmental intervention and "environmentalists," would look unfavorably on a militant campaign. Letter writing might bring negative repercussions. Instead, the committee chose a low-keyed publicity campaign through local news media to inform the public of the national importance of the colony. Key resource persons in state and federal agencies and conservation groups were identified, meetings arranged and courses of action explored.

On March 1, 1973 the Gunnison Island Committee presented the following recommendations to Governor Calvin Rampton.

Since the early 30s members of the Utah Audubon Society and other interested persons have sought to establish a refuge for the White Pelican on Gunnison Island. While most efforts have been met with sympathetic understanding, no concrete plans to ensure protection of this species have materialized. It is the intent of this committee to continue supporting this cause until ecologically sound plans and action are forthcoming.

The Gunnison Island colony, presently the third largest in the United States, is the only colony of its size not afforded federal or state protection. Numbers of White Pelicans have shown a 50 percent decline in the United States and Canada since 1964. The major factor contributing to this alarming decline is disturbance to the birds during nesting or to their nesting sites. Inasmuch as exploitation of the Great Salt Lake for its mineral, biological, and recreational resources is on the increase, it is imperative that immediate action be taken to insure that the White Pelican colony and its nesting sites remain undisturbed. The Gunnison Island colony is presently the only remaining stable colony in Utah and, for that matter, in the intermountain region.

It is recommended that a sanctuary be established for the White Pelican colony on Gunnison Island to insure the immediate and long-range protection of this dwindling species. It is further recommended that in pursuit of this end the State of Utah:

1. negotiate a purchase, option to buy, or long-term lease with present owners of Gunnison Island;

2. allow no unauthorized visits to the Island or within a one-mile radius of the shores during the nesting season from March 1 through October 1;

3. authorize legitimate scientific investigation in consultation with Dr. William H. Behle at the University of Utah and Dr. Jess Low of Utah State University and support their continued efforts to gather scientific data on the species;

4. stop all unauthorized visitations to the Island by photographers, collectors, and zoological societies;

5. prevent any activity on the Island during the off nesting season from October 1 to March 1 that would cause alteration to the communal nesting sites that are used from year to year;

6. include the management of Gunnison Island in a comprehensive ecological study and management plan of the Great Salt Lake to precede any industrial or recreational development;
7. suspend any activity on the Great Salt Lake or environs that will destroy the feeding grounds of the White Pelican.

The recommendations, released to the media and sent to environmental and citizen groups throughout the state, brought immediate results. On March 21, 1973 an emergency closure of Gunnison Island was issued by the Utah State Division of Wildlife Resources, effective during the breeding and nesting season from April 1 to September 30. In a meeting with the committee in April, Governor Rampton assured the members that the closure would be continued during the breeding and nesting season each year until a permanent arrangement could be made with the present owners.

Title to the major portion of Gunnison Island, totaling some 154 acres, was held by three private owners, with but a few acres being public land (Bureau of Land Management). For the next two years the Gunnison Island Committee explored options for preserving the habitat of the White Pelicans: purchase or lease by the State of Utah, acquisition by the U.S. Fish and Wildlife Service under the Department of Interior, purchase by The Nature Conservancy, donation by the owners. All such efforts proved unsuccessful because of the reluctance of the owners to sell.

Exploration for oil on the Great Salt Lake and an added interest in the extraction of minerals from its briny waters (eight times as salty as the ocean) complicated efforts. An article in the Wall Street Journal that dealt with the conflicting interests and controversies over the resources of the Great Salt Lake estimated its mineral wealth to range from $80 billion to $170 billion, excluding oil that might be discovered (James, 1974). The owners were looking to material gain. Efforts to negotiate sale allowing them to retain all oil, gas, and coal rights ended in failure and frustration. When asked why he wished to retain ownership of the island, one owner stated, "Because it's an island, and because it's mine."

Assured by the Utah State Division of Wildlife Resources that they were actively seeking means of acquiring the island, the Gunnison Island Committee disbanded. Members of the Utah Audubon Society who had served on the committee remained in contact with the Division of Wildlife Resources offering assistance whenever possible and acting as "watch dogs" to continued efforts.

Legislation for Pelican Management

Pressured by conflicting interests for the mineral wealth of the Great Salt Lake, the Utah State Legislature created the Great Salt Lake Policy-Advisory Committee in 1973. The task of this group was to prepare a comprehensive plan for the development of resources in the Great Salt Lake. The Division of Wildlife Resources was commissioned by the advisory committee to conduct a biological survey of the Great Salt Lake and its immediate environs. The final report, The Great Salt Lake Biotic System, summarized the findings (Rawley, et al., 1974).

In 1975, the Utah State Legislature created the Division of the Great Salt Lake to coordinate county, state, and federal interests on the lake. As a result of the recommendations made in the 1974 report on

the biota of the lake, the Division of the Great Salt Lake entered an agreement with the Division of Wildlife Resources for further study of the lake and its natural and mineral wealth. Although other areas were to be studied, the first task was to "assemble information and evaluate the importance of smaller islands in the Great Salt Lake as bird rookeries" (Rawley, 1976). Rawley's final report, Small Islands of the Great Salt Lake, included the following recommendations for the acquisition of Gunnison Island:

> It is recommended that Gunnison Island be acquired by the State of Utah and placed under the jurisdiction of the Division of Wildlife Resources to be managed for the benefit of colonizing birds with particular emphasis on the American White Pelican.
>
> In view of the fact that the owners have refused to sell on previous occasions it is recommended that the Utah State Legislature condemn the property with the stipulation that the present owners may retain the mineral rights and that in the event of oil discovery, it be obtained by offshore slant drilling.
>
> It is further recommended that the island be restricted to trespass on a year-round basis to provide opportunities for biological studies for the improvement of conditions for endemic species and colonizing birds (Rawley, 1974).

During the Utah State Legislative session in 1977, S.B. 123, the Pelican Management Act authored by Rawley, was introduced. The act provided for the condemnation and acquisition by the state of Gunnison Island for the protection, study, and management of the American White Pelican. Utah Audubon members lobbied behind the scenes for the passage of the legislation, the strategy being to contact key persons in the legislature but to avoid creating an issue. As conservationists waited with crossed fingers, the bill passed quietly in the final hours of the legislative session.

A valuation report was prepared for the Division of Natural Resources preparatory to condemnation of Gunnison Island by the state. The owners countered by contesting the constitutionality of the Pelican Management Act. During the summer of 1978, the First District Court ruled the act constitutional; however, the owners appealed the decision to the Supreme Court. Meanwhile, the Division of Wildlife Resources has filed and gained immediate occupancy and temporary legal custody of Gunnison Island pending the final decision of the Supreme Court. Although the battle is not yet won, there is considerable optimism that the Supreme Court will render a favorable decision upholding the legality of the act. Should this not be the case, conservationists who have labored thus far will continue with efforts to preserve the rookery.

The "happy ending" is not yet realized. However, this case study does provide a prototype for citizen involvement over a period comprising four decades. Essential to this continuous effort has been the complete documentation by such investigators as William H. Behle and Fritz Knopf. Because of their fine records, recent workers could

build on the past efforts of these scientist/conservationists. Another key factor in this movement has been the collaboration by citizens with local, state, and federal agencies in an effort to set reasonable and feasible expectations. Furthermore, sensitivity to public sentiment made it possible to utilize resources without alienating groups. At no point were workers so caught up in the movement that because of ego or power needs, they lost sight of the real issue, the preservation of the White Pelican. Finally, the history of citizen involvement in the acquisition of Gunnison Island illustrates the need for persistence and patience in coping with the many frustrations that block progress when preservation conflicts with development.

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THE DEVELOPMENT OF THE NORTH MISSISSIPPI ENVIRONMENTAL EDUCATION CENTER AND THE NORTH MISSISSIPPI ENVIRONMENTAL EDUCATION CONSORTIUM

by Virgil G. Heard*

Some educational reforms can be a tower of Babel. For some reason or another, environmental education has the capacity at times to bring otherwise-divergent groups together in common cause. Two junior colleges, two universities, a water management district, the TVA, the U.S. Army Corps of Engineers, the U.S. Office of Education, fourteen public school districts, a women's college, the Appalachian Act —all have had a hand in creating the North Mississippi Environmental Education Consortium and its projected environmental education facility at Bay Springs Impoundment on the Tennessee-Tombigbee Waterway.

The North Mississippi Environmental Education Center design was developed as an outgrowth of the interest in environmental education by the fourteen public school districts in the Three Rivers Educational Cooperative and the following institutions of higher learning: Northeast Mississippi Junior College, Itawamba Junior College, Mississippi State University, and the University of Mississippi. Other agencies which were involved were the Tennessee-Tombigbee River Valley Water Management District, the Tennessee Valley Authority, and the Nashville, Tennessee, District of the United States Army Corps of Engineers. The initial target audience for this project includes the general citizenry of Northeast Mississippi, Northwest Alabama, and eastern Tennessee areas. Also included are the students of the respective separate school districts, junior colleges, and universities included in this project.

Objectives of the North Mississippi Environmental Education Center

The objectives of the North Mississippi Environmental Education Center are as follows:

1. to provide enrichment curricula materials for secondary schools using the Tennessee-Tombigbee Waterway as a resource;

2. to utilize the facilities of the center to develop an informed citizenry capable of making wise environmental decisions;

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*Dr. Heard is a biology instructor at Northeast Mississippi Junior College, Booneville 38829. He is Program Director to the North Mississippi Environmental Education Center and has research interests in public water quality and limnology.

3. to provide higher education students a center for quality programs in field biology, agriculture, forestry, and other disciplines;

4. to provide government agencies and others a site to distribute information on new technological developments in such fields as alternative energy, sources and conservation of energy;

5. to provide researchers at the institutions of higher education appropriate areas and facilities to conduct their investigations;

6. to serve as a regional model for the development of physical facilities and curricula materials in environmental and energy education.

History of North Mississippi
Environmental Education Center

The history of the development of the North Mississippi Environmental Education Center is tied very closely to the development of an awareness of environmental education by Mrs. Hilda L. Hill of the Three Rivers Educational Cooperative. Mrs. Hill was sent in Spring 1975 to a teacher workshop about environmental education at the Laredo Taft Center on the campus of Northern Illinois State University in Rockford, Illinois. She was sent by the superintendents of the school systems in the following districts which make up the Three Rivers Educational Cooperative: Aberdeen, Amory, Baldwyn, Houston, New Albany, Okolona, Pontotoc, Tupelo, Chickasaw County, Itawamba County, Lee County, Monroe County, Pontotoc County, Union County, and Nettleton Line Consolidated District.

Upon her return from the workshop, Mrs. Hill involved an environmental specialist from Natchez Trace Parkway in some of the school programs and contacted John Paulk, Project Manager for Environmental Education, Tennessee Valley Authority. Mr. Paulk arranged to host 75 public school teachers and higher education personnel at the TVA Environmental Education Center at Land Between the Lakes in Kentucky. They held a brainstorming session in environmental education.

An offshoot of this meeting was that Mrs. Hill got permission from the Three Rivers school superintendents to contact the Mobile, Alabama, District of the United States Army Corps of Engineers about the establishment of an environmental education center on the Tennessee-Tombigbee Waterway. The Mobile District personnel were receptive and offered to change the route of the Waterway slightly to preserve the natural fossil deposits at Plymouth Bluff in Columbus, Mississippi. The Corps offered land at this site for a center; however, as it was not in the counties served by the Three Rivers Educational Cooperative, it was decided that Three Rivers would help find a local sponsor for a center at that site but continue with plans for another center in the counties served by the Three Rivers. The Tennessee-Tombigbee River Valley Water Management District offered to assist in the search for

a local sponsor, and ultimately Mississippi University for Women was secured as a sponsor for Plymouth Bluff Nature and Cultural Study Center.

In the fall of 1976, Three Rivers contacted the Nashville District of the Corps of Engineers and arranged with Mr. Paulk for the representatives of the Corps to visit Land Between the Lakes and become acquainted with the TVA environmental education center there. The representatives of the Nashville District were favorable to such a center at Bay Springs Impoundment in their district. Thus it was arranged for a meeting with the representatives of Northeast Mississippi Junior College, Itawamba Junior College, The University of Mississippi, and Mississippi State University to discuss such a center. The reaction was favorable. At this time President Harold T. White of Northeast Mississippi Junior College offered to manage such a center.

Three Rivers was funded on a short-term basis, 1974-1977, through an Appalachian Act grant, and received an additional one-year grant through the Office of Environmental Education, U.S. Office of Education. It was felt that perhaps a consortium of the four higher education institutions would be a more suitable local sponsor to neogtiate with the Corps than Three Rivers. It was arranged through a series of meetings between the four institutions that they form the North Mississippi Environmental Education Consortium for the purpose of serving as a local sponsor for the environmental education center. The four institutions of higher education were written into the consortium constitution as voting members. The Tombigbee River Valley Water Management District, Tennessee Valley Authority, and Nashville District of the Corps of Engineers were included on the board as ex-officio members.

In the spring of 1977 the individual institutions approved the draft copy of the constitution. They voted to approach the District Engineer, Colonel Robert K. Tener, with their concept of the center.

Meetings had been held with local representatives of the Corps and with Jeff Lincolnhoker of Hensley-Schmidt, a private planning firm out of Chattanooga which was doing the master plan for the recreational development at Bay Springs Impoundment. A preliminary site selection was made with Crow's Neck Peninsula on Bay Springs offering the most diversity of habitat and a favorable geographic relationship to other sites to be developed. This site was recommended by the planning firm and greeted favorably by local Corps personnel.

In the spring of 1977, Colonel Tener met with the following consortium representatives: Mrs. Hill of Three Rivers, Dr. Maurice Inman of the University of Mississippi, Dr. Charles Bouchillon of Mississippi State University, Dr. Heard of Northeast Mississippi Junior College, and Mr. Gale Trussell of the Tennessee-Tombigbee River Valley Water Management District.

The consortium proposed the following actions by the Corps of Engineers:

1. The Corps was to lease 530 acres of land on Crow's Neck Peninsula to the consortium;

2. The Corps would finance the construction of the physical plan such as buildings, boat docks, service roads, covered interpretive areas, wells, nature trails and other site improvements needed for an environmental education center;

3. The consortium would act as local sponsor and assume the maintenance and operational budget for the center by way of a lease.

This proposal was received favorably by Colonel Tener and accepted by the Corps of Engineers. The institutions of higher education adopted an official constitution for the North Mississippi Environmental Education Center in the spring of 1978. They appointed Mrs. Hill as Acting Director of the North Mississippi Environmental Education Consortium, with Northeast Mississippi Junior College as the fiscal agent for the project.

Description of the Features Included in the North Mississippi Environmental Education Center Project

The North Mississippi Environmental Education Center plans which have been funded for initial construction in the Corps of Engineers Master Plan of Bay Springs Lake were well-received in the public hearing held at Iuka, Mississippi in the fall of 1978.

The center is situated on Crow's Neck Peninsula approximately three miles south of Paden, Mississippi. The 530-acre site is the most diverse of all the Bay Springs Lake peninsulas in regard to tree cover, terrain, and wildlife habitat. It is one of the more remote sites around Bay Springs Lake. Features to be developed on the peninsula include hiking trails, a boat dock, a wildlife observation boardwalk, picnic areas, an overlook, self guided tour trails, and a boat launching ramp.

The physical plan is to include a multipurpose building with office space, an auditorium with audio visual capabilities, kitchen facilities and teaching areas. Other construction will include eight cabins for group usage. Each cabin will accommodate twelve people and will be self-contained in regard to sleeping quarters and bathroom facilities. The design calls for a center to accommodate approximately 100 persons for overnight use. This number was chosen because this was about two busloads of students. Access to the center will be by way of a 22-foot bituminous road. Crow's Neck is accessible by existing county roads from either S.R. 30 or S.R. 25. The Crow's Neck site will be readily accessible for educational groups, but is far enough from the main stream of lake activities to provide the proper setting for a study center of this nature.

Funding of North Mississippi Environmental Education Center and Related Curricula Projects

The funding for the construction of the physical plant and the site utilization planning costs were assumed totally by the United States Army Corps of Engineers. The land upon which the structures are to

be built is being leased from the Corps. These arrangements were negotiated with the Corps and are a result of the interest the Corps has taken in environmental education and the development of an informed citizenry. The physical plant and site improvement costs will total some $4,200,000.

A curriculum development grant was funded by the Office of Environmental Education (U.S.O.E.). The grant entitled "Crow's Neck Environmental Education Project," Grant No. G00-7700529, was funded for $63,489 for the period of July 1977 to July 1978. It was awarded to the Three Rivers Educational Cooperative under the direction of Mrs. Hill.

The grant called for the development of environmental education curriculum materials using the Tennessee-Tombigbee Waterway as a resource. The curriculum writing was done by thirteen teachers from the Three Rivers districts working in three teams. Dr. Les Knight of Blue Mountain College assisted the topography and remote sensing group; Dr. Stan Easton and Dr. Jean Shaw of the University of Mississippi were consultants for the population planning and social environment group; and Dr. Virgil Heard of Northeast Mississippi Junior College was the consultant with the biological studies group.

These three groups of writers and consultants wrote experiments and assembled resource materials for science students in grades 7 through 12 in such areas as: city planning, population density studies; barge travel, remote sensing, chemical and bacteriological water quality studies, and Chickasaw Indian culture. Many university people from the region contributed their original slides or materials from their private collections to be housed at the North Mississippi Environmental Education Center.

The following investigators contributed their time and materials to the success of the project:

Mrs. Faith McCullen
Biology
Amory High School

Mrs. Betty Long
Middle School Science
Fulton Junior High

Mr. John E. Darden
Middle School Science
Amory Middle School

Mrs. Lillie V. Akin
Chemistry and Physics
Shannon High School

Mrs. Norma Washington
Biology
Houlka High School

Mrs. Kathy Wilson
Language Arts
Hamilton High School

Mr. Cornelius Armstrong
Junior High Science
Nettleton School

Mrs. Donette Darnell
Special Education
Okolona

Mr. Jerry L. Horton
Social Studies
New Albany City Schools

Mr. Eddie Killough
Chemistry and Math
Pontotoc Separate School

Mrs. Shelia Baker Owens
Junior High Math
North Pontotoc

Mr. David Childs
Physics and Chemistry
Tupelo High School

Mr. John F. Weeden
Principal
Ingomar Attendance Center

Consultants:

Dr. Stanley Easton
University of Mississippi

Dr. Virgil Heard
Northeast Mississippi Junior College

Dr. Les Knight
Blue Mountain College

Dr. Jean Shaw
University of Mississippi

This grant has been submitted for funding for the July 1978 to July 1979 period.

Another grant written by Dr. Charles Bouchillon is currently under review by the United States Army Corps of Engineers. This proposal is entitled "Preliminary Site Analysis, Program and Facilities Integration Planning and Needs Evaluation for an Educational Facility at Bay Springs Impoundment on the Tennessee-Tombigbee Waterway for North Mississippi Environmental Education Consortium."

Dr. Bouchillon has proposed the following: a preliminary site analysis be done using remote sensing, a plan for program and facilities needs integration be formulated, and faculty members from the various institutions be augmented by TVA and Three Rivers personnel.

Future Plans for the North Mississippi Environmental Education Center

The following programs have been planned for the North Mississippi Environmental Education Center:

1. Distribution through teacher workshops of the curriculum materials written by the teachers in the Crow's Neck Environmental Education Project writing teams;

2. Reconstruction on the environmental education center grounds of a "dog trot" house representative of early dwellings in the Tennessee Valley;

3. The establishment of a collection of Chickasaw artifacts and exhibits showing the cultural contributions this people made to the early Tennessee Valley;

4. Implementation of research projects by pharmacy, forestry, architecture, agriculture, biology, and other researchers from the faculties of the consortium members;

5. Construction of demonstration solar energy and alternate energy exhibits to encourage energy conservation (private industries may be invited to display in this area);

6. A program of visiting lectures by individuals concerned with environmental quality and pollution control;

7. Areas to exhibit the latest in game and forestry management techniques;

8. Establishment of a center for information on environmental resources within the service area in order to provide a mechanism for the protection of ireeplaceable natural and cultural resources;

9. Provision of programming assistance to school districts interested in implementing their own environmental education programs, and assistance in the case of specific problems.

SAY GOODBYE TO COAL, NOT WYOMING

by Joe Lamson*

The Northern Rockies Action Group has been working with citizen organizations in Idaho, Montana and Wyoming since 1973. NRAG's main purpose is to provide citizens with the necessary training to create effective, grassroots organizations. The NRAG staff works with groups to share skills in such areas as how to start an organization, use of the media, community organizing, fund raising, strategy development and organizational maintenance. NRAG currently has nine full-time staff people engaged in these activities. The following case study outlines how one NRAG staff person worked with Wyoming groups to create that state's first citizen, statewide, advertising campaign on a conservation issue.

The 1975 Legislature was a turning point in the history of the Wyoming citizen movement in many ways. During that session, the Powder River Basin Resource Council[1] (PRBRC) and Wyoming Outdoor Council[2] (WOC) agreed to make a concerted effort to pass a resolution endorsing a coal *export only policy*. An *export policy* requires strip-mined coal to be shipped out of state to urban centers for conversion to electricity or synthetic fuels rather than burning the coal in Wyoming. The policy was a relatively new concept for the state. However, the citizen groups felt it was a policy that offered a viable alternative for Wyoming's energy development future. The export policy pointed up the very real fact that the people of Wyoming did have avenues to control energy development within their borders.

Wyoming's legislative session lasted 40 days. This short time period necessitated careful planning and timing for any lobbying effort. Introducing a new policy concept and getting legislative endorsement was a formidable task. The groups had to introduce the new issue, educate the people of Wyoming on the topic and build political support for it in a matter of days.

WOC and PRBRC decided that the best way to carry out this task was to conduct a week-long advertising and petition campaign during the session. A special committee was appointed to research, design, fund raise, organize and publicize the campaign in ten days, a sizeable request even for Madison Avenue.

Joe Lamson is Field Coordinator of the Northern Rockies Action Group, Helena MT 59601. He has worked with NRAG since 1974. His main interest is in working with citizen groups so they can play an active role in determining the future of the Northern Rockies.

Research

The task of research was divided into two basic topic areas: substantive research concerning the policy itself and research on the campaign design.

Substantive research, for the most part, had been done before the session. The main challenge was to distill that information into a form that was easily understood and convincing to legislators and the general public. Several export fact sheets were developed to accomplish this purpose.

Designing an effective campaign in such a short time is a difficult task. The campaign committee decided to devote a portion of its time to researching the audience they wanted to reach and the types of messages to use. This time investment paid off later.

Wyoming is a predominantly rural state, with a total population numbering about 375,000. In terms of population density, it is the most sparsely populated state in the continental United States. The people have a strong set of beliefs based on their rural, independent lifestyles. The export campaign staff wanted to tie their issue to some of these existing values and beliefs, and used research techniques to identify these ties.

The research was accomplished in three ways. First, it drew on the rich experience of people who lived in Wyoming. The residents understood each other's values, and could counsel the export campaign staff on ways to present the campaign issues. The Citizens' Lobby office was, in many respects, an ideal place to do this kind of research. People from all over the state were constantly coming through the office. This broad cross-section of people provided excellent data upon which to build the *export only* campaign.[3] Second, the energy companies and their advertising agencies were already engaged in selling Wyomingites on energy development. Some of the ad agency efforts were obviously based upon market research, since good public relations people always do some analysis of their audience before committing too many resources to a campaign. Advertising agency results are not an infallible source, but they did provide some valuable lessons for the *export only* campaign.

Third, the export campaign committee was very fortunate to have John Jenkins' recent research paper that contained an extremely valuable chapter on the Wyoming character and attitudes towards energy development and industrialization. Jenkins' study provided some hard information on which to keep or discard hunches on how to promote an *export policy*.[4]

From this research, several central themes were developed for the ad. Wyoming's people are basically a conservative lot. They are patriotic, and are willing to do their fair share to keep the country going. At the same time, they are acutely aware that they have something special in Wyoming, and are skeptical of "outsiders" and many of the directions the more industrialized parts of the country are taking. The export campaign staff kept these personality traits in mind.

Designing the *Export Only* Campaign

After all the research, it was time to design an ad which incorporated the campaign committee's findings, as well as some principles of persuasion theory. The major goal of any effective campaign is to reach a target audience and motivate that audience to carry out some action. The campaign committee decided the ad should be rather basic, positive, eye catching, and succinct. Furthermore, the ad had to state the issue and the problem (the threat of massive power plants in Wyoming), the alternative (a coal *export only* policy), and the actions that people could take to help alleviate the problem (sign a petition and write their legislators).

The ad was eventually run in the newspapers. It took up slightly more than a quarter of a page, and was generally located next to the editorial page. Approximately one-third of the ad space was devoted to the graphic and campaign slogan. Hand lettering was selected to add to the ad's visibility on a page usually dominated by set type. The handwritten style was done to reinforce the fact that the petition drive was a genuine grassroots effort.

The major motivators used in the ad were: a connection between patriotism and limited energy development, a love for Wyoming, and a suspicion of outsiders "ripping-off" Wyoming resources.

The ad's slogan and the logo (a *four-arrow* symbol) were used consistently throughout the campaign. All information and materials from the campaign bore these symbols so people would begin to associate them with the policy.

The actual petitions had the logo prominently displayed as well as the complete text of the export policy resolution. This design allowed people who supported the policy to recognize it quickly by its logo, while those who were more skeptical could read the actual policy text.

The radio spots primarily followed the text of the newspaper ads. However, the ads were rewritten slightly to make them more conducive to radio reading.

The radio scripts were then combined with a series of 35 mm color slides for the television spots. The TV viewer saw a collage of slides and heard a voice read the radio script. The ads were very inexpensive to produce ($10) and looked quite good.

No ads or campaign materials were released without including a tag line on who to contact for more information. A tag line serves several functions: it publicizes a local citizen group, legitimizes a message for local folks, and helps people follow up the message and become involved in the organizing effort.

Campaign Distribution

Wyoming, because of its small population, has few media outlets. This situation increases the importance of newspapers. Consequently, there is a limited number of communication sources that are available

to any resident. In one sense, this limitation is favorable for an ad campaign because, for a comparatively small amount of money, the ad can reach almost everyone in the state with a message.

Because funding for this project was not secure, a system of priority media was established. Information was gathered on each media's audience, area served and advertising rates. This information was then compared to the baseline research data to find areas in which advertising was most crucial.

The main goal of the ad campaign was to create a favorable atmosphere around the state so that the petition carriers could move quickly and gather a maximum number of signatures in a short period of time. Again, it is highly important to set a reasonable goal for any campaign effort in order to have some impact on an audience.

The following media priorities were established:

1. Wyoming's large criculation newspapers received the highest priority for advertising. The Casper Star Tribune is received in one out of every ten Wyoming homes. The Cheyenne papers also fall in this category and were selected for ads because of the legislator and state government readership.

2. Smaller circulation newspapers in areas to be heavily impacted by coal development received the second priority. Most of Wyoming's local papers reach between 70 percent and 90 percent of the households in their service areas.

3. The third priority was television. The Casper station reaches 85 percent of the state's households. TV is a great deal more expensive than radio, but it was decided that, because of its massive coverage, it would be worth the investment.

4. If funding allowed, radio spots would then be done. The larger stations were chosen first and then smaller stations were selected to fill in the "gaps" in the listening pattern.

By the end of this process, a plan was mapped out to reach every home in Wyoming that had a newspaper, radio or TV.

The order in which the ads appeared also was carefully planned in order to build excitement for the week-long campaign. Ads started to run on radio and television evening news on Monday through Friday. On Tuesday, the first newspaper ads appeared in the Cheyenne paper and University of Wyoming student paper. On Wednesday morning, the readers of the Casper Star Tribune and the state's dailies read the ad. The weekly newspapers ran the spot on Thursday.

Organizing

Without a well-organized petition drive, the ad campaign would have gone nowhere. The petition drive had to be geared up to capitalize instantly on the new awareness created by the media campaign.

Petition drive leaders were found in all but three of Wyoming's counties. Each person was given a packet with the following information: 1) a cover letter explaining the campaign and what they should do; 2) petitions which included information explaining when and where they should be returned; 3) a fact sheet on the export policy; 4) a copy of the ad; and 5) a sample press release for local papers and stations on the purpose of the ad campaign.

The whole campaign effort was coordinated from the Cheyenne office. Liberal use of the telephone was made to check with volunteers to see how the campaign was progressing throughout the week.

Fund Raising

Most media require payment in advance for political advertising. Thus, the ad campaign had to be completely funded before it was released. Because the ad committee was working under such a tight deadline, a strategy of selling the campaign to larger donors was chosen. The committee was able to allocate only one day of intensive fund raising.

A funding package was developed to present the ad campaign to potential donors. The package was made to look as professional as possible, since people were being asked for relatively large contributions.

The package included a rationale for an *export policy*, a budget outlining costs and the number of people who would be reached if "X" dollars were raised, and sample ads. Two committee members went along to answer questions.

One extremely beneficial event which occurred during the fund raising effort was the opportunity to sound out new ideas on the ad's content and strategy. In this way, potential funders became an integral part of the campaign's planning.

The export campaign committee was very successful in raising the entire budget. This success meant that the ad was able to run in all four of the committee's media priority categories.

Campaign Results and Evaluation

A crucial part of any campaign is setting up some parameters to measure success or failure. The ultimate goal of the export campaign was the passage of the *export policy* resolution. By this political measure, the campaign failed. In the final hours of the campaign, the *export policy* was lost in the House Committee considering the resolution, even though the Committee had previously agreed to allow the resolution to be introduced on the floor of the House.

Even though the *export only* resolution died in the Committee, its political power was not lost. Over 8,000 people had signed the petitions in seven days. Most Madison Avenue campaigns are considered successful if 1 percent to 2 percent of their target audience is motivated to action. The export campaign was able to gather 4.3 percent of their target audience signatures after just one week of exposure!

The *export policy* was a very popular idea indeed. The stacks of petitions became critical to other energy bills during the season. The Citizens' Lobby was able to demonstrate successfully that, if over 8,000 Wyoming citizens were concerned enough to sign a petition to keep power plants out of Wyoming, then there was certainly widespread support for strong power plant siting laws and strict air pollution standards.

So, in a political sense the campaign had mixed success. On advertising and petition drive measures, the campaign was definitely a success.

A county-by-county analysis was done after the ad campaign to determine where the campaign worked and what some of the critical success factors were. Not surprisingly, counties which had heavy media saturation and a well-organized petition drive were most successful. Several of these counties had 8 percent to 15 percent of the target population signing the petition. This percentage is quite heartening, since most of these areas were sparsely populated. Petition carriers literally had to carry petitions for miles over county roads in the middle of winter.

Of course some of the counties paid no attention to conventional advertising rules. Some counties with relatively light media exposure turned in large numbers of signatures, while other counties with heavy exposure did poorly.

Summary

Important lessons can be learned from planning and implementation of the export campaign. These lessons can be applied to a wide variety of communication and organizing efforts, as the following examples show:

1. Know the nature of your media. Media only creates a background atmosphere to facilitate action. If you create an urgency issue in the public's mind, have an action available for people to do. In the case of the export campaign, petitions were available and an army of petition carriers was ready to capitalize on the excitement of the media blitz. Media is no substitute for grassroots organizing.

2. Take some time to research your audience. Become a conscious observer of public attitudes and opinion trends. The export campaign used three crude research methods. These methods are within the capability of any citizen group; the important lesson is to discipline yourself to take the time to do basic research. Tying your issue to the existing attitudes and concerns of your audience greatly increases your chances of success.

3. Campaign distribution should be well planned. Media is used to create an atmosphere of excitement, so give some thought to timing early in your campaign. The export campaign timed their ads to steadily build to a climax towards the end of their week-long effort.

Critically examine all your media outlets. Make sure they cover all the areas you hope will receive your message.

4. Fund raising for specific media campaigns can be done if handled professionally. The export campaign funding was procured because the campaign committee had an attractive product to sell. Funders knew what they were getting for their money and what results it was likely to have.

5. Critically evaluate the results of your campaign. Failures are as important as successes. Try to determine how each campaign was received by the public. This evaluation process is crucial to your continued success.

Valuable lessons can be learned from persuasion research. These lessons can aid citizen groups in avoiding costly mistakes and increasing their effectiveness. These techniques can be implemented inexpensively by making a commitment to using them in your daily media efforts.

FOOTNOTES

1. Powder River Basin Resource Council, Sarah Gorin, staff coordinator, 48 North Main Street, Sheridan, WY 82801.

2. Wyoming Outdoor Council, Bill Sperry, coordinator, P.O. Box 1184, Cheyenne, WY 82001.

3. For a more complete description of the Citizens' Lobby, see Constituency Building and the Environmental Movement, by John Jenkins, in the NRAG Papers, 1(3), Summer, 1976.

4. John Jenkins, Four Dollars and Six Cents Short, Senior Thesis, Princeton University, 1974.

UNIVERSITY OF WATERLOO UNDERGRADUATE PROGRAM AND ENVIRONMENTAL POLICY

by Sally C. Lerner and James E. Robinson*

Students in a university environmental studies program can influence community environmental policies as an integral part of their own education. That is the theme of this report from the University of Waterloo, Ontario, Canada, where for ten years an undergraduate degree program has been built around independent student and team involvement in researching environmental issues and policy options. It is just such education-for-public-action that has characterized the environmental movement.

Other reports in this compendium illustrate how environmental action groups have mounted environmental education programs as one significant means of achieving the goal of developing or altering environmental policy. At a different level, however, an environmental education program can initiate such research and action groups as a means of achieving educational goals; these groups can, partly through education of appropriate actors, influence environmental policy issues as well. A number of such groups initiated within or associated with the Department of Man-Environment Studies at the University of Waterloo have influenced environmental policy at various levels.

The Department of Man-Environment Studies offers a four-year undergraduate honours program leading to a B.E.S. degree.[1] An integral part of the program is a seminar/workshop in each of the four years offering an opportunity to engage in independent research on an environmentally related problem or issue of particular interest to the student. These projects, supervised by faculty advisers, are carried out individually or, more often, as a member of a project team.

The project courses were designed originally with several purposes in mind: 1) to encourage students from the outset of their university experience to take the initiative in following their own interests in the area of environmental studies, with close faculty guidance in how to develop an effective project plan and successfully implement one's objectives; 2) to provide experience in team effort, stressing the problems and rewards of working cooperatively with others to achieve

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**Ms. Lerner and Mr. Robinson teach in the Department of Man-Environment Studies, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1. Ms. Lerner's current research interests are social response to perceived scarcity and improvement of worklife quality. At present, Mr. Robinson's major research interests are in the development of energy self-reliance at the community level and the transition to a "conserver" society.*

mutually agreed upon goals; 3) to offer the opportunity at the undergraduate level to undertake "academic" work which would also be useful; i.e., make a contribution to a recognized research area and/or be of practical value to some segment of the community—at the local, regional, provincial or national/international level.

In reviewing the nearly ten years of the program's existence, it is gratifying to be able to catalogue a substantial number of projects carried out by undergraduates in the Department of Man-Environment Studies which have addressed themselves to environmental policy on various levels and have, in a number of cases, made some impact on the formulation and implementation of such policy. Since policy formulation in any area is essentially a political process, it has been particularly valuable for our students to gain an understanding of the fact that "knowing about" a certain problem—occupational health hazards, land use conflicts, endangered species, water conservation needs—is only the first step in attempting to bring about social or policy change which can alter the course of events with regard to that particular problem. The following summary of some representative projects dealing with various levels of government and industry includes many which were successful in some measure in affecting some aspect of environmental policy, and several which failed to exert as much influence as was desired. An attempt has been made to select not only cases which develop new policy or make changes in emphasis in existing policy, but also cases illustrating opposition to policies then in existence.

Local Government

While a number of projects have dealt with local issues, the following case was selected specifically because of the involvement of education.

Parks Management and Environmental Education

The housing and diet of animals in the Waterloo Park wildlife display, donated as a centennial project by a local service club, aroused the concern of people in the community and of a group of six first-year students. These students, assisted by a faculty member and a teaching assistant, conducted a winter-term study of the display area and future alternatives for it including dismantling. A wide variety of aspects were investigated, ranging from the philosophy behind such wildlife displays to the types of animals included and the educational and recreational function of the display. At the same time, continued consultation was maintained with the community services director responsible for parks, an active area residents association, the mayor and interested aldermen. Recommendations presented at a city council meeting the following autumn included vehicular road closings, cage enlargements, dietary changes, and the formulation of an educational program, including unconfined park wildlife as an integral part. The city council reacted very favourably to the report and formed a Wildlife Committee, with representatives from the city, the local boards of education, the provincial natural resources ministry, and the donating service club. Part of the committee's responsibility was to examine, and where possible to implement, the students' recommendations.

A year later, when only one major recommendation—development of the wildlife education program—had not been implemented or even started, two students made a successful proposal to the Committee to develop an interpretive educational program for the display in return for the committee's financial support. Over the next six months, with cooperation from the boards of education, the city and many others, the students produced an educational manual, complete with sets of accompanying slides and materials for duplicating, which now is being published for use in elementary schools in the region in conjunction with, or separate from, a visit to the wildlife area.

Local Industry

Students have also been instrumental in changing policies of industries in significant ways as is illustrated in the following case of a relatively local industry.

Occupacional Health

Dave, a worker at a dusty porcelain factory, was trying to force the management, unwilling either to respond to complaints or to allow a plant tour by students interested in occupational health, to clean up, and to find effective ways to inform his fellow workers, many of them unskilled fearful immigrants with limited English, about health hazards.

Two third-year students, in conjunction with the Ontario Public Interest Research Group, agreed to work with Dave, who described the workplace in detail and provided samples of particulate raw materials, masks and filters with records of use, monitoring frequency and effectiveness.

The students made generic determinations of samples, assembled information on toxicity, and used a scanning electron microscope to record particle dimensions for some substances whose toxicity depended on particle size and structure. In their conclusions, the dust masks were found inadequate and proper ones were specified, and strategic use of new occupational health legislation was outlined to force a cleanup of the plant. A very popular pamphlet to educate workers about silicosis, suggested workplace precautions and their rights, was published by OPIRG.

As a result, the company has since spent some $500,000 for improvements, Dave was elected union president (despite the management's attempts to undermine the campaign of this increasingly expensive employee), and the students had a rare chance to learn about ways in which workplace battles sometimes have to be fought.

Regional Government

Because local municipalities in many cases react on an ad hoc basis, and provincial and national issues are usually too diffuse and broad in scope for students to participate effectively as actors in the four

to eight month duration of a student project, participation in development and changing of government policy has often taken place in conjunction with the regional level of government, in this area the Regional Municipality of Waterloo, formed in 1973. In Ontario, Regional Municipalities were created by the provincial government to reform and strengthen county government over areas experiencing urban growth pressures. A first task assigned to them was to prepare and obtain provincial government approval for a binding Official Policies Plan. The following cases represent areas where student work has had significant influence on policies.

Formation of a Regional Ecological Experimental Advisory Committee

In Waterloo by mid-1973 a third-year student successfully rounded up support and won the approval of the new Regional Council to establish an Ecological and Environmental Advisory Committee to the Region. The committee is composed of about 20 people affiliated with citizen environmental and conservation groups, land developers and builders, planning and environmental consultants, universities, district offices of provincial Ministries, and other Regional organizations. The committee serves as a forum for discussion of environmental issues among the diverse interests concerned with environmental issues. It helped formulate the Regional environmental policy, and now that the Official Policies Plan is approved, it also serves as a review committee for environmental impact studies required by the Region under certain circumstances. The student who initiated the formation of the committee served as its first Chairman until he completed his undergraduate degree and went on for graduate work in another province. A faculty member was then elected chairman of the advisory committee, and three other staff from the program have served as members of it.

Preservation of Local Remnant Natural Areas

During the formulation of the Regional environmental policy, studies done at various times through the university served to identify local natural areas deserving of protection, either because of their features such as natural diversity or landforms, or because of their ecological functions; e.g., their contribution to the hydrologic cycle. The advisory committee helped work out criteria to select the 69 local areas which were eventually designated and helped elaborate an environmental impact assessment process to apply to any proposed development change which would affect them. With funds obtained through the Ontario Ministry of the Environment, teams of students have been working during each of the past four summers to gather information useful first to develop, now to implement, the policy. When this environmental policy was approved in the content of the Regional Official Policies Plan by the provincial government in December 1976, it was the first time in Ontario that such explicit recognition was given to the need to protect the principal features and ecological functions of local natural areas as an integral part of municipal planning and land use decisions. In large measure this can be attributed to the mutual education process involved in the many discussions among the diverse

members of the advisory committee, the professional planning staff, and elected members of the Regional Council.

Environmental Advisory Committees and Natural Areas Preservation in Other Regions

With this encouragement, these ideas have spread. Another Regional Municipality created a similar kind of advisory committee in early 1976 in part through the active encouragement and participation of a graduate teaching assistant in the Man-Environment Studies Program. It has also agreed to protective measures for 38 local natural areas in the Draft Plan it will be submitting to the province. The same teaching assistant has supervised three teams of students doing field reconnaissance surveys in two neighbouring counties to identify areas for this kind of recognition in Official Plans, and prepare a "manual" for use of other individuals and groups in the province interested in this approach.

As of mid-1978, preliminary inventories of natural areas had been compiled by various individuals and groups for at least 15 regions, counties or urban municipalities in southern Ontario. A third Regional Municipality is reported to be ready to appoint an environmental advisory committee, and another recently proposed protective policies for 30 natural areas in a Draft Plan approved by its Council in June 1978.

Accompanying this renewed interest in natural areas has been a steady flow of requests for background information both to the Waterloo Region planners and to the Man-Environment Studies people involved, as well as requests for papers reviewing the experience. Students in the program now regularly select practical problems relating to the protection of particular local areas for work in their project-course, and the graduate teaching assistant who has been strongly committed to this innovation in municipal planning will be using the experience for a Ph.D. thesis.

Development of a Regional Water Conservation Program

The Regional Municipality of Waterloo is the largest metropolitan area (pop. 300,000) in Canada still able to use ground water, which is cool and needs essentially no chlorination, as its sole source of water supply. Because the supply system for a city was often located in adjoining rural townships, the responsibility for water supply was transferred from the local municipalities to the region at the inception of regional government, while the responsibility for water demand (distribution) and price structures remained with the local municipality. In response to increasing demand for water, the region has continued to drill more wells in rural areas. Recently, as a result of a perceived substantial lowering of water tables, the farm community has become adamant that no more wells should be drilled and that other supplies should be developed and used, especially when the cities do not take seriously stewardship of the resource. The alternatives considered were a large dam on the principal river in the area, with implications for social and economic disruption and flooding of good farmland, and a far more expensive pipeline to Lake Erie.

A group of eight first-year students was not satisfied that the only response in this situation was to increase supply. Although the political structure's separation of the supply from the demand function mitigated against their views, they concluded that such actions as attempting to reduce demand and to change price structures, which neither level of government felt to be its responsibility, might be less costly financially as well as ecologically. The ideas they developed in their examination of residential, institutional, industrial, and municipal water conservation alternatives were sufficiently convincing that faculty members were able to gain financial support from various agencies in the three senior levels of government (federal, provincial, and regional) to hire 20 students for the summer to further investigate conservation as an alternative. When the three city governments agreed to cooperate also, this project became unique in commanding support from four different levels of government. As well as doing further research on the viability of water conservation, these students also developed water conservation education programs including water bill stuffers, mall displays, slide-tape shows, etc. After some of this material was shown to the regional councillors, the latter extended their financial contribution for a follow-up nine-month project focusing on pilot testing of a residential water conservation program.

Provincial Government

Environmental Mercury Pollution by Industry

A politically active student wanted for his senior project to work on what he felt was immediately necessary in a wider public campaign to ameliorate a critical environmental problem.

A paper company had been implicated in contaminating a river system with mercury and ruining the livelihood and to some extent the health of the native peoples living on two Indian reserves that depended on fishing. The refusal of the provincial government even to admit the problem—much less to intervene—furthered the disintegration of life in the formerly viable villages of Grassy Narrows and Whitedog. A secret decision by the government to grant the company an additional 20,000 square miles of forest without consulting local Indians caused a scandal.

The student joined a team of lawyers, political organizers, and social scientists who were preparing a lawsuite against the company. Then he helped an investigative journalist to do research which led to an influential book on the tragic situation of the native people. Soon he was helping to organize demonstrations that were crucial in solidifying widening public opposition to the new forestry scheme. He was hired by the Ontario Public Interest Research Group to help write an extensive publication, Quicksilver and Slow Death, about mercury pollution in Canada and a corporate study of the company. He had made a very able contribution in trying to rectify a major social and ecological disaster in Canadian history. The results have not been as great as was hoped, partly because those most seriously affected were not middle class citizens. However, the provincial government

has begun epidemiological testing of the natives in the area and has declared that the expansion scheme will now be subjected to their recently developed environmental assessment procedure which until then had only been required of public projects. As well, although the mercury issue is not the major reason, the company has decided to shelve its expansion plans, at least temporarily. Thus some time has been gained to devise better solutions.

Federal Government

National Parks: Resource Inventory and Planning

Relatively few students' projects have dealt with national issues involving policy change. However, the following is an example of one.

Demands both for new national parks and for increased public access to existing parks prompted Parks Canada (a federal government agency) to prepare "master plans" for its parks. While earlier plans had been based largely on prevailing visitor or park user patterns, these new plans would be the basis of the management process intended to serve preservation, education and recreation objectives. The basis of the master planning process was to be the "resource inventory" of natural resources and ecosystems of the parks. Working as part of the planning group for Banff and the Waterton Lakes National Parks, one student studied the nature of the resource inventory and its role in the planning process. Particular attention was given to the researcher—planner interface, and identification of issues in resource inventorying and planning. The student developed a set of recommendations designed to improve the resource inventory and the relationships and flow of information between resource analysts and planners. Not only have many of her recommendations been subsequently adopted, but the student was appointed to a full-time position in the Western office of Parks Canada to help implement them.

Concluding Remarks

These cases involving several different levels of government and industry illustrate that many factors determine an action group's influence on environmental policy at any level. One of these is the development of an education program as part of the effort.

Further, this program should be clearly focused to educate policy-makers and interested and important actors. An important part of the program includes ongoing discussions and information-sharing with appropriate politicians, civil servants, industries, workers and the affected public.

As well, it is obvious that students in an undergraduate environmental education program can influence policies as an integral part of their own education. Students in the Department of Man-Environment Studies have been successful in this respect.

It is our contention not only that undergraduate students can influence environmental policy, but also that all formal education programs which are truly environmental should make students cognizant that in addition to good research, often an education program of some type is necessary to change environmental policy.

FOOTNOTE

Francis, G. R. "Man-Environment Studies Programs, University of Waterloo, Ontario, Canada." In Schoenfeld, Clay and John Disinger, Environmental Education in Action - II: Case Studies of Environmental Studies Programs in Colleges and Universities Today. Columbus, OH: ERIC/SMEAC, 169-177, 1978.

MICHIGAN UNITED CONSERVATION CLUBS IN ACTION

by Teri Littrell*

Beginning as early as the 1870s it was the hunter and fisherman in search of serenity or recreation in the out-of-doors who first sensed in any numbers the ill-effects of what Eric Sevareid was to call "the mis-development" of America. Outdoorsmen saw the ravages of logging and forest fires, of farm soil erosion, of lake and stream pollution. They approached these problems with some of the patience and perseverence of the stalk—but with none of the silence. They began to call loudly, through voluntary organizations and campaign literature, for government help. Today's outdoorsmen continue to be in the forefront of environmental education for action, and they are unique among environmentalists in that they willingly pay special excise taxes on their rods, tackle, guns, and ammunition to finance massive environmental protection programs. Representative of organized sportsmen is the Michigan United Conservation Clubs, with over 100,000 members, 425 affiliated organizations, a headquarters staff of 30, and a direct link to the potent National Wildlife Federation in Washington, DC. The MUCC lobbying track record is impressive, indeed.

Overview and Goals

The Michigan United Conservation Clubs (MUCC) is a statewide non-profit citizens' organization dedicated to advancing the cause of the environment, and the conservation of natural resources. In pursuing this goal of wise use of our resources, MUCC promotes sound educational programs designed to produce a knowledgeable citizenry devoted to conservation and environmental action.

MUCC was founded in 1937 by sportsmen with a primary objective of keeping partisan politics out of the realm of natural resources management. In the beginning, the organization's attention was focused mainly on fish and game management, but has since expanded to include a concern for all conservation issues, such as natural resources management, environmental education, outdoor recreation, enhancement of fish and wildlife populations, water quality, waste management, and prevention of environmental degradation.

With over 100,000 members and 425 affiliated organizations throughout Michigan, MUCC is the largest coalition of conservation organizations in any state. This statewide organization is affiliated with the National Wildlife Federation and, with the Federation, has influence over national environmental legislation. MUCC has a full-time staff of 30 located in Lansing, Michigan. The staff includes personnel with expertise in biology, geology, environmental education, resource development, journalism, art, advertising, fund raising, and administration.

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*Ms. Littrell is Environmental Education Specialist, Michigan United Conservation Clubs, Lansing 48909.

Organization

To facilitate policy formulation and assure democratic representation within the organization, MUCC is divided into 20 districts, 19 based on geographic sections of the state and one district for clubs with statewide or broad regional areas of influence. Each district is represented on the State Board by three directors and a chairman, elected by the district membership. A field representative, who also serves on the State Board of Directors, is then appointed by the MUCC President for each district. The governing body of MUCC, then, is composed of the district representatives mentioned above, the State President, three statewide vice-presidents, four regional vice-presidents, and a treasurer.

Policy Formulation

The state convention, held each June, is the highlight of the MUCC year. It is the time when representatives of all clubs affiliated with the association assemble to elect the MUCC officers and consider problems of conservation and the environment that may affect all of the people of the state. The decisions on these issues are made by the convention delegates, who are chosen by their clubs.

Throughout the year, members of each affiliated club are entitled to vote on conservation proposals presented at club meetings. Proposals adopted by a club are eligible for consideration at district and regional meetings of affiliates. If approved at the regional level, the proposals are then placed on the agenda of the convention.

The convention functions much like a legislative assembly. Its main purpose is to provide an annual forum where proposals relating to conservation, environmental issues, and outdoor recreation are voted upon by the duly elected delegates. Convention delegates have the opportunity to debate each resolution. Once a resolution is adopted, it becomes the official policy of MUCC. The association's staff then attempts to implement the intent of the resolution by working with the proper individuals, agencies, or elected units of government.

Services

Educational Programs

MUCC's program is varied with emphasis in three major areas: education, legislation, and litigation. In the field of education, the organization has been dedicated to creating an aware citizenry, knowledgeable about conservation and environmental issues. Michigan Out-of-Doors, MUCC's monthly magazine, contributes greatly toward this goal. It provides information, entertainment, environmental education, legislative news, and news of club activities to one-half million readers. In addition to the magazine, MUCC publishes numerous booklets and educational kits that are available free of charge or at nominal cost to the public. These materials include: a monthly youth publication called Tracks, recreational guides, Great Lakes Nature Guide, Wildlife Cookbook,

an extensive conservation and recreation film catalog, educational resources catalog, endangered species kit, energy kit, wetlands kit, water kit, wildlife management kit, and a career catalog.

Every spring, MUCC promotes National Wildlife Week in Michigan by distributing thousands of National Wildlife Federation educational kits to teachers in Michigan schools and to youth groups. National Hunting and Fishing Day activities are coordinated by MUCC every fall when local clubs are encouraged to arrange special events for the public to honor sportsmen's contributions to conservation.

Other educational endeavors include sponsoring a summer youth camp for six weeks each year, holding leadership training conferences, workshops for teachers, recreational safety training programs, and hosting Outdoorama, the largest sports show in Michigan.

Legislative Programs

Legislation dealing with environmental issues is of major concern to MUCC. The organization functions in many ways to influence the outcome of legislative decisions at the local, state, and national levels. The MUCC staff represents Michigan's sportsmen and conservationists before governmental agencies, regulatory commissions and elected bodies ranging from local zoning boards to the legislature, and Congress. The MUCC staff is involved in every major outdoor recreation and environmental bill to come before the Michigan legislature. Appearances before public bodies may be made by MUCC officers and members, the executive director, and other staff members.

A most important means of carrying out the mandates of MUCC's membership is through active lobbying for legislation favored by the organization and against measures it opposes. The executive director is a registered lobbyist to conservation and environmental matters to the state legislature. He also works with lawmakers to draft legislation to promote conservation.

Besides legislative lobbying, the MUCC executive director and staff members are involved in administrative lobbying before such bodies as the Michigan Natural Resources Commission, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, the Environmental Protection Agency, and State Board of Education. In this capacity, MUCC staff members present the organization's positions on issues and influence policy directions in these administrative agencies.

With active MUCC involvement, effective conservation legislation has been passed in Michigan. This legislation includes:

1. The Kammer Land Trust—This bill established a recreation land trust fund whereby royalties and other fees from oil, gas, and mineral production on state-owned land are earmarked for acquisition of prime recreation lands for public use.

2. Duck Stamp Bill—A state duck stamp bill signed by Governor Milliken in July, 1976, will raise more than $200,000

annually to finance a statewide inventory of valuable swamps and marshes and to purchase the available lands having highest priority.

3. Michigan Environmental Protection Act—MUCC actively supported the enactment of the Act which allows citizens, governmental entities, groups and business to sue for relief from violations detrimental to the air, water or other natural resources and the public trust therein.

4. PCB Bill—This bill restricts the manufacture, sale and use of PCB's (polychlorinated biphenyls). MUCC continues to monitor provisions of this act to prevent any weakening of the intent of the act.

5. Hunter's Access—This bill provides for an additional $1 charge for all persons hunting in the southern Lower Peninsula of Michigan, using the revenue raised to lease farmland from private owners for public hunting.

6. Ban on Large Mesh Gill Nets—Through intensive lobbying by MUCC, the legislature banned the use of large mesh gill nets which indiscriminately kill all fish that swim into them. This measure was critical to the restoration of the Great Lakes fishery.

Top-priority legislative issues currently include passage of land use legislation, wetlands legislation, establishment of a statewide environmental education program, and removal of the bounty on coyotes.

Other Conservation Programs

Along with establishing conservation and environmental policy through the state legislature, MUCC has worked to improve environmental programs through non-legislative channels. Some of these accomplishments include:

1. The Public Access Site Program-1953: This program provides for increased public lake access throughout the state. Today Michigan boasts more public access sites than the other 49 states combined.

2. Clean Water and Recreation Bond-1968: MUCC was chosen by the Governor to lead the educational effort in Michigan for voter approval of a measure to provide $335 million for water quality restoration and recreation. It was a very successful campaign.

3. Porcupine Mountains as Primitive Area: In 1958, the Bear Creek Mining Company, a subsidiary of the Kennecott Copper Company, petitioned the State Conservation Department for a lease on the mineral rights of some 900 acres in the Porcupine Mountains State Park, as well as 5000 acres of Lake Superior submerged land adjacent to the park. Thanks

to MUCC's efforts in spearheading a coalition of organizations to fight this, the company, after a year of controversy, withdrew its request. Also as a result of MUCC's actions, the Porcupine Mountains State Park remains undisturbed by mining operations and has been designated as a state wilderness area.

4. Bottle Bill: MUCC undertook a petition drive and collected over 400,000 signatures to place the question of banning throwaway beverage containers on the ballot after the legislature had refused for more than a decade to face the issue. The ensuing campaign for voter approval, also led by MUCC, was so successful that the proposal was approved by a margin of almost 2 to 1 in the state.

5. Natural Resources Commission's Phosphate Ban: This policy decision bans the use of phosphates in home laundry detergents throughout the state.

Presently, MUCC is involved in many environmental/conservation issues of statewide concern. These issues include policy formation for state transportation, source reduction and resource recycling, used oil recycling, newspaper recycling, nuclear waste management, water diversion which includes irrigation and dam regulation, Great Lakes winter navigation and user fees, state and federal air and water pollution problems, solid waste management, stricter billboard controls, and state energy programs. The organization is actively working on the control of toxic chemical contamination of fish and waters, toxic waste handling and disposal, state water quality standards including all "208" plans under the Federal Clean Water Act, pollution discharge permits, and dredge and fill operations on all Michigan waters. Land use planning is also a concern. MUCC monitors such programs as the state and federal management of public lands and the designation of wilderness lands and natural rivers. More general issues which warrant MUCC attention are the reorganization of the Department of Natural Resources, Seafarer-ELF (military communication network proposed for Michigan), continuation of the public access program, and implementation of the bottle bill.

Litigation

Litigation is entered into generally in emergency situations to halt potential damage to resources or the environment, to stop violations of conservation statutes, and to protect the rights of recreationists. The organization has been exceptionally active in defending what it perceives to be the rights of fishermen and hunters. Such issues as Indian hunting and fishing rights, commercial fishing, water pollution by Great Lakes carriers, riparian water rights, wildlife management, a suit against CBS concerning the television show Guns of Autumn, shorelands management, and proper use of recreational lands have been focuses of MUCC's involvement. MUCC, as well, is involved as amicus curiae (interested party) to many lawsuits whose outcomes will affect natural resources management.

Funding

Because MUCC is a non-profit organization, most all funds acquired through its programs are used to promote local, state, or federal conservation endeavors. The organization obtains most of its operating budget from membership dues, sale of publications, and sponsorship of programs.

Besides membership dues and related funds, MUCC maintains an educational program through which monies are generated. Included are the sale of U.S. Geological Survey topographical maps, Michigan lake maps, and nautical charts of the Great Lakes. MUCC publishes the following books for sale to members and the general public: Wildlife Chef, Westwind Woods (youth conservation publication), Trout Streams of Michigan, Great Lakes Nature Guide, and Michigan County Maps and Recreational Guide. Outdoorama, the state's largest sports show, is another means of financial support for MUCC. This sports show is held annually in Detroit where companies and various organizations exhibit merchandise and educational information. Also, MUCC occasionally receives grants from government agencies for projects to increase public participation in resource management issues.

Representative Issues

The Bottle Bill

Although MUCC has been involved in many projects and has worked toward varied goals in the areas of citizens' participation in conservation/environmental issues, one of the most outstanding contributions made by the organization was the passage of the Michigan Bottle Bill in 1976. Various forms of similar legislation to ban non-returnable beverage containers had been introduced in the Michigan Legislature beginning in 1965. But not until MUCC adopted a resolution at its 1975 convention that directed the staff to work to put the bottle bill on the ballot if the bill failed in the legislature did the issue reach the Michigan voters.

The "grassroots" operation of MUCC is where the bottle bill started. Initially, the idea of beginning a bottle bill campaign in Michigan was mentioned at a local club meeting by a club member. The club accepted the idea; the proposal was accepted at the district level, endorsed by the region, and appeared as a resolution at the annual convention. The resolution was accepted and made a part of MUCC policy for the coming year.

By early 1976, it became apparent that the bill would not pass through the legislative channels and MUCC began organizing the petition drive. Over 400,000 signatures were collected by the end of the six-week petition drive, the most successful petition drive in the history of Michigan, and perhaps the country. A statewide coalition was formed by MUCC to counteract the $1.3 million campaign waged by the opponents of the bottle bill. The coalition, spending $117,000, worked to place the issue on the November ballot and the people of Michigan supported MUCC's position by voting in favor of the bill by a 2-to-1 margin. A

teachers' packet, written for nationwide distribution, is available on the bottle bill for a cost of $2.00. Also available is a strategy paper outlining MUCC's work in the passage of this important legislation.

Restoration of Great Lakes Fishery

The five Great Lakes comprise the largest body of fresh water in the world and most probably have contained the world's largest fresh water fishery resource. Through the 1940s, the Great Lakes produced tremendous amounts of food taken by commercial and sports fisheries. However, as a result of many problems, the Great Lakes were rendered virtually sterile by the mid-1950s. In less than a decade, the predatory sea lamprey, which made its way from the Atlantic Ocean through the St. Lawrence Seaway and the Welland Canal, combined with the over-exploitation of the commercial fishery and toxic pollutants, destroyed the fish populations of the Great Lakes and also undermined the potential of the area as a water recreation resource.

MUCC became involved with this issue as "The restoration of the Lakes" effort began under the direction of the International Joint Commission on the Great Lakes. MUCC served as the primary citizens' organization involved in lobbying for legislation and rules that would restore the Great Lakes to a healthy and productive ecosystem. First, the sea lamprey was brought under control. Next, only a limited commercial fishery on the Great Lakes was permitted. A zone management program went into effect to designate commercial and sports fishing areas in the Great Lakes. In conjunction with these programs, the lakes were restocked with lake trout and anadromous fish species such as steelhead and salmon.

MUCC was instrumental in gaining passage of a ban on large mesh gill nets, commercial fishing nets which indiscriminately destroy any species of fish caught. Due to anti-pollution laws, such as the Federal Clean Water Act which was strongly supported by MUCC, the lakes began to "clean-up" and somewhat restore themselves.

Because of citizen action such as that spearheaded by MUCC, the Great Lakes fishery and recreational potential has been greatly restored. Serious problems remain, however, particularly toxic chemical pollution and contamination of fish and an unregulated Indian commercial fishery. MUCC continues its interest in these issues by active participation in legislation, litigation, and educational efforts.

The following paragraphs further explain MUCC's involvement in the issues of toxic pollutants in relation to the Great Lakes.

Toxic Substances

The control of toxic chemical contamination of the environment is recognized as the most critical environmental issue facing Michigan and the Great Lakes. Contamination from DDT, PCB, and mercury of some fish species in the Great Lakes and several inland waterways

makes these fish unacceptable for commercial sale and dangerous for regular human consumption.

MUCC has been instrumental in passing PCB control legislation, having "fish eating advisory" placed on Michigan fishing law digests, and exposing and forcing clean-up of numerous incidents of illegal dumping and toxic waste disposal. Currently, MUCC is working on the Governor's Task Force on Toxic and Hazardous Wastes and through the state legislature to bring about construction of a state-controlled comprehensive toxic waste management center.

Future Directions

MUCC continues to expand its expertise and public service programs to provide the best possible education on conservation and environmental issues for its members and the general public. In the future, the organization will continue to adopt policies of action to further the cause of natural resources conservation, and environmental protection and enhancement. Environmental issues of particular concern in the near future for MUCC are those dealing with toxic substances controls, water quality, land use, energy, and wetlands protection. Sportsmen's issues will continue to include a strong advocacy position in support of hunting and fishing, opposition to registration of firearms, and management of state and federal lands to include hunting as a legitimate recreational use. Educational efforts will include a wildlife docent program which involves training volunteers to present school children with wildlife ecology concepts, continued work on the passage of a statewide environmental education bill, and the new monthly youth publication, Tracks.

MUCC's future course of action is best stated in its official bylaws:

> The purpose of this corporation shall be:
>
> a. To further and advance the cause of the environment and conservation in all its phases, and to perpetuate and conserve the fish, game, mineral, air, water, forest, and land resources of the state; to so manage the use of all natural resources that this generation and posterity will receive the maximum benefit from the same.
>
> b. To promote programs designated to educate citizens in the cause of natural resource conservation and environmental protection and enhancement, creating in them an awareness and understanding of the importance of this aim and equipping them to work knowledgeably and effectively toward this achievement.

MINNESOTA ENVIRONMENTAL EDUCATION BOARD

by Karen Loechler*

The Minnesota approach to environmental education is unique in that it provides a regionalized system for guaranteeing local citizen input into local programs directed at audiences as broad and diverse as the state's population. A statutory Minnesota Environmental Education Board and 13 Regional Environmental Education Councils provide a network of 162 volunteers across the state, plus five seven-member task forces in the St. Paul-Minneapolis area. Environmental education techniques are as varied as the imaginations of the council members. With the wind chill factor at minus 70 degrees, for example, some 2,000 people turned out for an energy conservation fair at Fergus Falls. Supplementing the activities of state agencies, the MEEB and the REECs have no pre-determined audiences or issues.

January in west central Minnesota. Never the best time for counting on the weather.

January 31, 1977, was worse than usual. A near-blizzard had been raging across the flat terrain for almost three days; visibility was near zero, the wind chill -70°. It was Saturday and the director of the state Energy Agency had decreed that thermostats in public buildings would be turned down to 50° on weekends.

A group of local citizens was disappointed. They had spent six weeks planning and publicizing an energy fair to be held in the Fergus Falls Armory. Given all the circumstances the day was offering, the event was sure to be a failure. But it was too late to back out. Exhibitors were arriving; resource people had planned educational presentations. The fair would go on.

And before the day was over some 2,000 persons had braved the wind and the cold to attend. Mufflers and mittens stayed put and puffs of steamy breath were created as people stopped at exhibitor booths to ask questions about insulation, solar heating units and wood-burning stoves.

There were a lot of lessons in the experiences of that cold day for the Minnesota Environmental Education Board (MEEB) and its system of 13 Regional Environmental Education Councils (REEC).

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*Ms. Loechler was first employed by the Minnesota Environmental Education Board, St. Paul, MN 55155, in 1972 to write Environmental Education...A State Plan for Minnesota. After several years as Assistant Director, she was named Executive Director in 1977. A University of Minnesota journalism graduate, she has been a newspaper editor and a junior college instructor.

1. The first known energy fair in Minnesota had proven to be a popular and successful event. Despite the weather—perhaps because of it—people had made the effort to attend. (A subsequent effort on a reasonably warm April Saturday was less successful; energy conservation, understandably, had become a less urgent concern.)

2. Exhibitors, who initially had to be cajoled into participating, were suddenly asking for repeat opportunities. (All but one of the 25 said they would be willing to pay for booth space the next time.)

3. Pre-publicity is vitally important. Fergus Falls residents thought it had been adequate, but there was agreement that radio and newspaper coverage should have spread further.

4. A method is needed for establishing the credibility of potential exhibitors. Regional councils are interested in environmental education. Sponsored events are not to be business ventures for anyone, but educational ventures for everyone. Brief workshops featuring the experiences of individuals who practice energy-efficient lifestyles; i.e., users and builders of wind and methane generators and a beer can solar heating collector, were extremely popular. They had knowledge and experiences to share, rather than products to sell.

All of that is a perhaps too-lengthy introduction to environmental education in action in Minnesota. For the sake of example, energy is the selected topic.

The Minnesota approach to environmental education is unique in that it provides a regionalized system for guaranteeing local input into local programs directed at audiences which are as broad and as diverse as the state's population. MEEB and 13 REECs provide a network of 162 volunteers across the state. The ranks have expanded recently with the addition of five seven-member task forces to assist the efforts of the St. Paul-Minneapolis metropolitan area council, which must attempt to reach more than half the state's population.

It is extremely important to note that the state board and regional councils are by no means carrying the entire environmental education load in Minnesota. Our efforts supplement, complement and augment other excellent programs being offered by the Departments of Education and Natural Resources, the Pollution Control Agency, the Energy Agency, the University of Minnesota Agricultural Extension Service and the Environmental Conservation Library of Minnesota.

The difference is that MEEB and the REECs have no pre-determined audiences or issues...everybody and everything is our territory. Our objective: to plan, develop and implement programs and activities for Minnesotans of all ages, which will ultimately result in a statewide environmentally-literate citizenry. And since passage of enabling legislation in 1973, we have been working towards that lofty goal. Today a professional staff of six coordinates and facilitates

the work of the state and regional units. State funds appropriated for fiscal years 1977-1978 amount to $508,000. Methods and techniques employed are as varied as the imaginations of the volunteer council members who serve the system—workshops, conferences, seminars, symposiums, traveling displays and exhibits, radio, television and newspaper coverage, public issue-oriented forums and media talk shows, slide-tapes and other audio-visuals, teacher in-services, family weekends and legislative hearings.

A typical year of programming begins with each council and the state board developing individual work plans. Each REEC identifies at least three major programs or activities which it plans to complete during the year. Each of the new metro area task forces has agreed to sponsor one major program. Actually most REECs will accomplish considerably more than the required minimum.

In the process of putting together work plans, regional members determine a priority environmental issue for the area they serve. Last year the overwhelming choice was energy. Though the identification of a priority issue in no way dictates programming, it is naturally an indicator. And while REEC and MEEB programs during 1977-78 covered a variety of topics including water quality, land-use planning, wildlife habitat, solid waste and hunter education, a great deal of effort, and energy, were devoted to energy.

And while it's difficult to cite legislative decisions, representative sampling surveys or document gallons of fuel saved as a result of our energy programming, we think we've made a difference.

Since that cold January day in Fergus Falls, successful energy fairs have been planned by regional councils in eleven Minnesota communities. Usually sponsorship was shared with the Minnesota Energy Agency via one of its local energy outreach committees. Most were successful, bringing in audiences of between 2000-4000. Two, which were more heavy-weight in content and length, were definitely the least successful. Last February's fair in Bemidji (north central Minnesota) is undoubtedly the champion of them all— in terms of both quantity and quality. The only certain negative was inadequate parking to handle the almost 8000 people who attended. Perhaps the outstanding feature is that due to a staff vacancy, the arrangements were handled almost exclusively by council members. The experience of other fairs encouraged the Bemidji planners to charge exhibitors for booth space. Forty available spots went quickly at $50 each. Of 28 exhibitors completing the requested evaluation, all said they would like to be involved in other similar events. The energy fair route has turned out to be one of the most effective avenues for regional councils to cooperate with the business, industry and labor communities, audiences which are not generally easy to reach via traditional educational methods.

Environmental education energy programming has by no means been limited to energy fairs. During the past year other successful energy-related events have included:

1. a 10-week community education course on "energy efficient housing,"

2. construction and distribution of 10 energy learning stations to 13 schools in southeast Minnesota, which were used by 3500 students and teachers;

3. a day-long seminar on the use of wood as fuel in central Minnesota, attended by 150 persons;

4. co-sponsorship of a seminar on "Energy Alternatives for Farm and Home" (hoped for 45 people; 85 showed);

5. a teacher workshop, "Energy, Values and the Urban Environment" for metro area teachers. Prior to the conference, development of a student energy profile was attempted by surveying 1200 students. In the broadest, most sweeping terms an overall summary of the survey data was that while students agree that a serious energy crisis exists, they are reluctant to take any sacrificial steps themselves. Conference participants completing the evaluation rated the conference midway between satisfactory and very satisfactory and all said they would like additional in-service opportunities. Proceedings of the conference and results of the survey were distributed to 500 groups and individuals;

6. exhibiting the American National Environment Wit display of energy-saving methods, which was viewed by 300;

7. an energy and agriculture workshop for 100 people in west central Minnesota. Resource personnel were interviewed and taped for broadcast on local radio shows, adding to the program's impact;

8. mailing packets of Sun Day teaching activities to every school district in the state;

9. an energy in-service workshop for teachers in southeast Minnesota. Of 51 evaluations, 50 indicated an interest in a similar workshop annually;

10. a public forum to present opposing points of view on legislation which would require a mandatory deposit on all non-returnable beverage containers. Though the audience was smaller than hoped (about 85 on a cold and stormy St. Patrick's evening), a post-meeting survey showed that eight people in the audience changed from undecided or negative to positive towards such legislation. A typical response: "This was the first opportunity I've had to hear both sides. Now I feel the evidence is overwhelmingly on the side of the deposit law...;"

11. a meeting on resource recovery and source separation; attendance poor but meeting highly rated by those who attended;

12. a recycling workshop which was well-attended by the general public, but poorly attended by elected officials, who were the primary target group.

13. production of a slide-tape featuring Minnesotans who are living energy-efficient lifestyles.

What does this all say? Where is the action in this environmental education? The Minnesota Environmental Education Board may not be able to point directly at specific changes in values, new laws, increased profits for insulation companies or a decreasing interest in snowmobiles. Not directly. But indirectly we know that we've turned on hundreds of teachers to using energy curriculum ideas and promoting energy conservation...we've let the public know that there are things they can do in their own homes to make a difference...we've made an effort to communicate to farmers that biggest may not always be best.

Education has never been the fastest, most efficient process. But in Minnesota we think we're proving that many little impacts will eventually add up to a big impact...that involving local people in the planning of local programs is the only way to insure success at the local level.

ILLINOIS ENVIRONMENTAL COUNCIL

by Sandra McAvoy*

The Illinois Environmental Council is a lobbying organization, make no bones about that, "helping its groups and members interact with state legislators and environmental administrators," representing 600 individuals and 40 environmental groups. Current primary objects are the preservation of the state's natural heritage, the integrity of the Federal Clean Air Act, and passage of deposit legislation for Illinois. This is a case study of gloves-off environmental education.

Structure

The Illinois Environmental Council, composed of over 600 individual members and 40 environmental groups which represent approximately 30,000 members, is a statewide lobbying organization helping its groups and individual members interact with state legislators and environmental administrators. The Council, currently, has two classes of membership fees, individual membership at $15 per year and $25 for two years, and affiliated groups with a minimum pledge of $100 annually.

The membership elects a Board of Directors at its Annual Meeting in February to serve as "policy and priority makers" for the Council. Individual members are represented by one person on the Board, and affiliated groups elect seven individuals. Also, a group or individual pledging $1,000 a year may appoint a Board member. The present Board consists of the following officers and members:

President	Daniel Swartzman
Vice-President	George Jackson
Secretary-Treasurer	James Yoho
Directors:	Bruce Hannon
	Katie Huther
	Deonne Beth Orvis
	Stephen Packard
Individual member representative	James Dalluge
Appointed directors:	Jerry Paulson (Audubon Council of Illinois)
	Ted Woodbury (Great Lakes Chapter, Sierra Club)
	Dick Worthen (Piasa Palisades Group, Sierra Club)
	Len Coburn (Izaak Walton League of America, Illinois Division)

Ms. McAvoy is Executive Director of the Illinois Environmental Council, 407½ E. Adams Street, Springfield 62701. She is a graduate of S.U.N.Y. at Albany and has done graduate work at S.U.N.Y. at Albany, Penn State, and Sangamon State University

Ralph Passarelli (Sangamon Bank and Trust)
John Kirkwood (Chicago Lung Association)

The Council maintains a small professional staff in Springfield, Illinois (the state capitol) which includes an Executive Director, Sandra McAvoy; Office Manager, Judy Elsass; and Newsletter Editor, Virginia Scott.

History of the Organization and Activities

The Illinois Environmental Council was formed in 1975 through a grant of $15,000 from the Illinois Public Action Fund, Inc. for the purpose of coordinating environmental groups on state issues. Jerry Wray, a physicist from the University of Illinois, took a leave of absence from his job to serve as the first Director and was responsible for the initial organizing effort. Judith Groves assisted Wray and became Director upon his resignation. On February 19, 1978, Sandra McAvoy succeeded Judith Groves.

Throughout its history, a primary objective of the Council has been preservation of the state's natural heritage. One controversy in this area has been the protection of the Middle Fork of the Vermilion River near Danville, Illinois. The dispute began in 1966, when the Vermilion County Conservation District, with the support of Governor Otto Kerner, began purchasing land around the river for the purpose of building a reservoir for recreational activities and Danville's future water supply. In 1970, the Committee on the Middle Fork of the Vermilion River was formed to oppose the dam and the battle of studies, reports, and news conferences began. Both Governor Richard Ogilvie and Governor Dan Walker supported the dam. In 1976, the Committee on the Middle Fork with the direct efforts of the Illinois Environmental Council successfully defeated Governor Walker's appropriations requests for the dam. During the proceeding gubernatorial campaign, the Democratic candidate, Michael Howlett, supported the dam. The Republican Jim Thompson opposed it, stating that Illinois did not have the funds for the project. After election, the Thompson administration became bolder in its pro-river stance. Events reached their apex on May 3, 1978, when unpublicized negotiations between the officials of the City of Danville, the Vermilion County Conservation District, the Committee on the Middle Fork, and Governor Thompson's office resulted in settlement. On May 9, Governor Thompson in Danville announced that $300,000 would be provided by the state to start work on any one of 47 alternative sources of water for Danville set forth in a 124-page report by the Illinois State Water Survey and the Department of Transportation's Division of Water Resources. This comprehensive $32,000 study assures water for Danville through the year 2010 without damming the Middle Fork.

Thompson also agreed to support H.B. 3257 implementing a land exchange between the state and the Vermilion County Conservation District. Under this plan the state will control the land on the west bank of the river; the county on the east. Windfall Prairie and Horseshoe Bend will be officially designated as state nature preserves and the Indian mounds known as Collin's Archeological Complex will be placed

on the National Register of Historic Places. These set-aside lands all but preclude the building of a reservoir on the Middle Fork.

A second major priority of the Council has been to defend the integrity of the Federal Clean Air Act. In 1977 a bill (S.B. 281) to set deadlines on the Pollution Control Board for setting new emission standards for existing coal-burning facilities outside the major metropolitan areas of the state was introduced. One of the criteria was that the standards could not be any more restrictive than necessary to meet minimum federal standards. The Illinois Environmental Council, assisted by the Chicago Lung Association and the League of Women Voters of Illinois, supported an amendment sponsored by Representative Virginia MacDonald (R-3) which would have deleted the part of the bill which limited the state to the federal standards. Representative MacDonald was successful in getting the amendment adopted in the House. However, when the Senate refused to concur, the House by a margin of one vote dropped the MacDonald amendment. The Illinois Environmental Council then convinced Governor Thompson to veto S.B. 281; on September 23, 1977, Governor Thompson did veto the bill. During the fall veto session, IEC was successful in the House in upholding the Governor's veto by a margin of 27 votes.

A third major objective of the Council has been to secure passage of deposit legislation for Illinois. The Illinois Environmental Council made deposit legislation its highest priority during the 1977 legislative session. On April 22, the "bottle bill" sponsored by Representative Daniel Pierce passed the House Committee on the Environment, Energy and Natural Resources for the first time in its history by a vote of 10 to 4. After this initial victory, the deposit legislation encountered major difficulties. Upon reaching the House floor the anti-bottle bill forces countered by introducing a "newspaper amendment," sponsored by Representative Joseph Ebbesen, requiring a three-cent deposit on newspapers. The amendment was defeated, but the effect hurt the original legislation. Despite valiant lobbying by the Illinois Environmental Council, when the bill was called for a vote it received only 42 (out of 177) affirmative votes. Ironically, two days later the Illinois Department of Transportation reported that statewide litter pick-up cost Illinois taxpayers $3 million a year; the single leading item was non-returnable beer and soft drink cans that have been rapidly increasing in number.

Funding

The Illinois Environmental Council is a private, non-profit organization. Initially we established ourselves as a 501(c)(4) organization which qualified us to be exempt from paying taxes. About two years ago we established the Illinois Environmental Council Education Fund, and we were able to qualify as a 501(c)(3) organization. We do our lobbying work as the Illinois Environmental Council and have used the Education Fund to channel any grants we have received to do work that is considered educational. Individuals who contribute to the Education Fund may claim a tax deduction.

Approximately one-half of our income comes from individuals and environmental organizations around the state. Previous to this year, organizations donated any amount they desired to the IEC. This year we set up a minimum annual fee of $100 for organizations to become an affiliate of the Council. We also established a system whereby an organization which pays $1,000 per year is entitled to appoint a member to the IEC Executive Board. Individuals pay $15 a year which entitles them to a subscription to our monthly newsletter, the IEC News, as well as other special mailings. At various times we have had several membership categories, however, they have not always been too successful.

Besides individual and group memberships, we sometimes receive donations from individuals and groups. When we have worked on specific campaigns, such as for the bottle bill, we often receive donations to go toward expenses involved with those campaigns. Organizations will sometimes hold a fund-raising event and contribute the proceeds to the IEC.

In past years the remainder of our income has come from a variety of grants that we have received.

In 1976 we had a grant from the Illinois Humanities Council to do two conferences relating to land use planning. The purpose was to examine our current land use ethic in its historical perspective and to discuss present attitudes toward land use and the rights of the individual versus those of the state. The IEC organized two forums, entitled "Can Society Legislate Land Use," which were held in Effingham, Illinois, in November, 1976. They were attended by farmers, university people, state government personnel and interested citizens.

From July 1976 to May 1977 we were awarded a grant by the Department of Health, Education and Welfare, under their Environmental Education program, to do a series of workshops on projected shortfalls of natural gas and alternatives to its use, such as synthetic fuels, solar and wind power and energy conservation. The workshops were geared to citizens and government to increase understanding of the energy problem and provide an opportunity to discuss and suggest solutions to the problem. We held workshops in four cities in Illinois (Champaign, Carbondale, Chicago and Rockford), then held a final workshop in Springfield to bring together the participants from the other workshops and legislative personnel.

A third grant was received from the U.S. Environmental Protection Agency in November 1977. This grant provided for planning and executing a two-day meeting which would involve citizens in the 208 Water Quality Planning process. Individual citizens and government experts from the EPA discussed methods of cleaning up Illinois' rivers and streams in order to meet federal EPA guidelines.

In the spring of 1978 we had a contract with the League of Women Voters in Illinois to be the downstate coordinator of Sun Day (May 3) activities. This involved about two months' work organizing groups in downstate Illinois to sponsor Sun Day activities in their communities.

In all cases with the grants we did not "make money" per se, as the grant money was to go toward planning and preparing for the specific workshop/conference. However, we were able to use some of the money for salaries, supplies, sharing of rent, telephone, postage, etc. and thus be able to divert our own income into other expenditures.

We are in the midst of preparing a brochure which will be used in a campaign to gain new individual members. We intend to make use of other environmental organizations' mailing lists as well as to attempt to attract new friends who might be interested in some specific issues on which we are working. Since we will be working on another bottle bill campaign, we will attempt to gain new members or donations through appeals on that issue.

Funding always seem to be the "big, dark cloud" hanging over our head, as we are never sure if we will have enough money to stay alive. This seems to be a common problem with many environmental organizations (and other non-profit organizations) which depend on individual donations to make up their budget. Somehow we have to develop new fund-raising techniques. Fund-raising takes staff time, however, and with only three staff persons (only one full time), time is limited, if we also want to accomplish all of our program and educational goals, organize the diverse environmental groups into an active coalition, and lobby in the legislature.

Future Plans

For the 1979 legislative session, the Illinois Environmental Council will organize and coordinate another major effort to secure deposit legislation in Illinois. So far the Council has distributed candidates questionnaires which included a question on bottle bill legislation. This material will be published and widely distributed across the state. The Director of the IEC has been in touch with the sponsor, Representative Daniel Pierce and Environmental Action Foundation to redraft the bill. Representative Woods Bowman has volunteered to do a study on the economic impacts of such legislation on Illinois. A press conference to release the revised version of the bill and the economic study is under consideration. Groups and individuals have been contacted to begin organizing their efforts at the grassroots level. Victory in 1979 is anticipated.

A second major organizing effort concerning hazardous and nuclear waste is underway. The Illinois Environmental Council and its affiliated groups testified on August 23, 1978 in Chicago before Senator Vince DeMuzio's subcommittee on Local Governmental Affairs concerning the nuclear and industrial waste situation in Illinois. Richard Worthen, a Board member and representative of the Sierra Club, is under consideration for appointment to a Task Force being developed to implement the Resource Conservation Recovery Act of 1976 in Illinois. In addition, the Council sponsored a mini-conference in Bloomington, Illinois on September 16, 1978. The agenda for the meeting included proposals of basic reforms to be presented to administration officials and a list of names to be submitted to the administration for the appointment of an "industry" representative to the Illinois Commission on Atomic Energy, and selection of legislation to be introduced in the 1979 legislative session.

"SAVE OUR STREAMS" — THE IZAAK WALTON LEAGUE IN IOWA

by Roy W. Overton*

What can probably be called the nation's first true citizen action environmental organization was formed in Chicago in the 1920s when 54 devotees of the outdoors organized the Izaak Walton League of America "to call a halt to pollution." The educational message of those early Waltonians was strikingly modern: "Environmental influences control all life development. They determine where the brook trout shall swim, where the whip-poor-will shall sing, where the violets shall perfume the atmosphere. In the city, environmental influences are the hindrance to a higher mental and physical development of man, and determine which of us shall end our career in hospitals for incurables, or in prison." In the 1970s the IWL led a national "Save Our Streams" campaign, with chapters "adopting" streams in their areas. The prototype program was on the outskirts of Des Moines, Iowa; the leader, not a scientist nor an educator but a general-practice MD. This is his personal report.

Around 1973, the Des Moines Chapter of the Izaak Walton League (IWL) undertook a program of the adoption of a small stream running through northwest Polk County and emptying into the Des Moines River near the freeway, approximately two miles from the center of downtown Des Moines. Our thoughts were at this time to adopt a stream by studying the stream, studying its ecology, its environment, walking along the stream edges seeing what sources of pollution might be involving the stream and noticing the types of plants, animals, etc., around the stream and keeping an ongoing program of this nature, perhaps even acquiring some information regarding simple scientific observations of the stream. None of us in our program were scientists and none of us had any background in geology or the study of limnology.

After beginning a course of care of the stream and observing it, the National IWL established a National "Save Our Streams" (SOS) Program which became a very important part of our national environmental program. The IWL then, on a national basis, went into a "Save Our Streams" Program in which we asked groups of people, both nationally and locally, whether they be IWL groups or other groups, to adopt streams. In fact, we were able to receive some funds through U.S. EPA and for two years had a "Water Wagon," a coachman truck driven by one of our National Organization people, around the country giving talks and speeches throughout the whole United States. Public appearances, etc. were done on a daily basis, setting up S.O.S. Programs

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*Dr. Overton is a Family Practitioner who practices medicine in West Des Moines, IA 50265. The Izaak Walton League and water quality has been his hobby for many years. He has been a member for 12 years, and an officer in the Des Moines Chapter for eight years.

throughout the whole country. These programs were a marked success and the truck was driven by one of our National IWL employees, David Whitney. More information about the National Programs of the IWL is available from Bob Axelrad, SOS Coordinator, IWLA National Office, 1800 N. Kent Street-Suite 806, Arlington, VA 22209.

The state of Iowa IWL also has a stream program adoption which is headed by myself and is called the "Save Our Streams" Committee. Recently we have, in association with our SOS Program, a new program called the "Fish America Today" Program which we felt would involve sportsmen as well as environmentalists as more active participants in this activity.

The Beaver Creek Program handled by the Des Moines Chapter continued to make progress. During the course of these studies we were able to utilize the facilities of Drake University and in fact, because of the close contact with Drake University, our Chapter has donated money for a scholarship fund in Limnology to Drake University on an apparently ongoing basis, so that each year Drake University will have a student sponsored by the Des Moines Chapter of the IWL in liminology for furthering of water studies. An attempt to evaluate Beaver Creek was then performed; the results of the Beaver Creek Study are an Appendix to this paper. The program at Beaver Creek is essentially finished for our studies on turbidity, nitrates, phosphates, temperature, etc., but we are continuing our surveillance of the stream primarily by walking the stream, fishing, and rafting down the stream. For me personally, it has become a hobby.

The Beaver Creek Project stimulated then a number of talks to our own groups at the Des Moines Chapter. Our Des Moines Chapter is about 1800 members and is the largest single Chapter of the IWL in the United States. It has produced a number of talks, both by myself and others, and bringing in other speakers regarding different aspects of water pollution—sewage sanitation engineers, water quality experts, etc. as well as professors from Drake University who have spoken about different types of water pollution and studies that they are carrying out. Our program therefore became self-educational.

During this time, various schools in the area became quite interested in the SOS Program and we have been involved also in speaking primarily to fifth graders in the school systems in the small towns around Des Moines. This project included discussing types of pollution and water pollution with the students on a level that they could understand and encouraging young people to take an active part in protecting our streams.

During this time a "Bottle Bill" became popular in Iowa. The IWL and the SOS Committee felt that the anti-litter resolutions should be part of the anti-litter part of the SOS Program and be channelized towards legislative action. Letters to our legislators, meetings, and attending public meetings, etc. all seemed to play a role on getting the Iowa "Bottle Bill" passed.

As to the state program of the IWL, there are about eight programs in Iowa of stream adoptions. Most of these are clean-up programs attended by Chapters of the IWL, but there are a number of other

environmental groups which have adopted streams or who are taking part in stream clean-up programs. We have never attempted to take credit for another group's activities; in fact, we have felt that it is to our benefit to allow them to utilize SOS Programs and have stood back and offered to them our expertise from our past experiences with the program. We feel that anyone can adopt a stream whether they are small children or large groups of people and that the stream adoption purpose is that the cleanliness of the large streams comes from cleaning up the smaller ones. We do not feel that a lot of scientific ability or training or equipment is necessary for proper evaluation. The use of four of your five senses (don't use the sense of taste) in studying a stream may be of value, such as visual inspection along the stream—looking for types of plant life in the stream and along the edges of the stream, observing for soil erosion, studies for turbidity, watching for both non-point and point source pollution areas by observation, requesting information from the Department of Environmental Quality, studying the stream base, whether it has a mud base or sand or gravel, and if there are any changes in that stream base. The types of plants in the water may indicate types of pollution and whether or not there are fish or other animals in the water gives us a good idea about the pollution, dissolved oxygen, etc.

The funding of our program has primarily been through donations of the Des Moines Chapter of the IWL, for the particular equipment which I have used (dissolved oxygen kits), paying for any chemical determinations that may have to have been performed, and the establishment of a scholarship fund in liminology at Drake University. All of these have been due to the kindness and dedication and funding from the Des Moines Chapter. The Iowa Division of the IWL likewise has funds set aside for "Save Our Streams" and "Fish America Today" Programs. Primarily at this time we are in a sign posting program having to do with posting signs in areas around streams where fishermen may have caused some of the pollution by leaving cans, etc.

I feel the "Save Our Streams" Program has been successful although not to the extent I would like. I think, in Iowa, there should perhaps be much more interest and much more enthusiasm especially concerning soil conservation. It is obvious that in Iowa the largest single pollutant that we have is turbidity due to soil erosion. I think that the only way that this is going to be done is by backing legislation enabling farmers to economically pursue soil conservation practices. In doing so, this will in itself help cleanse our streams of turbidity and chemicals. I would like to see more studies done regarding the effects of organic pesticides and chemicals in an agricultural environment such as ours. The use of these organic hydrocarbons is common and I feel that our organization, and others like ours, should continue to back studies of the possible carcinogenic effect and teratongenic effect of some of these organic hydrocarbons. I also feel that success in this area is going to require considerable legislation about placing chemicals that have not been studied in our streams, especially those which are not biodegradeable.

Another measure of success will be how actively we back our legislators in meeting with our communities in regard to their sewage

treatment plants. I am sure the "Save Our Streams" Program in the future should involve itself in clean drinking water programs so that our sewage treatment effluents are not drained into running surface waters which will be consumed by someone else.

Perhaps greater diligence should be exercised with regard to conservation and watershed maintenance for drinking water purposes. I hope that in the future the "Save Our Streams" Program will show considerable influence in public legislation and education, both in our elementary schools and of our own Chapters within the Izaak Walton League and that we will encourage people to attend public hearings and public meetings targeted on these problems and enhance the public's awareness of some of the problems which we are facing.

APPENDIX: BEAVER CREEK STUDY

by Roy M. Overton and John Miller*

The Des Moines Chapter of the Izaak Walton League in association with Drake University has been completing an eight-month study of Beaver Creek as part of our "Save Our Streams" program. This program has included the use of a graduate student in liminology, John Miller of the Drake University Biology Department.

Beaver Creek has been the primary creek for the SOS project of the Des Moines Chapter. It is a small creek which drains agricultural land from the west-central part of the state of Iowa and encompasses a good section of agricultural black soil. There are at least five small towns along its banks, many of which empty primary and secondary treated sewage into the stream. There are no tertiary sewage treatment plants along the path of the stream. The creek runs approximately 75 miles in length, has a total drainage area of 372 square miles, and empties into the Des Moines River near the northern boundary of Des Moines, Iowa. Grimes Creek, a tributary, joins Beaver Creek approximately five miles above the city limits of Des Moines. This stream is about seven miles in length and drains from a small city, Grimes, Iowa. We felt that studying the area around Beaver Creek and the insertion of this small creek into Beaver Creek would give us an idea about the effects, if any, of a small stream on a larger stream.

The studies were made at weekly intervals from December through July. During the entire study we kept track of dissolved oxygen, pH, the most probable number of coliforms, and enteric coliforms. The water temperature and various chemical tests including nitrate and nitrite nitrogen, ortho and meta phosphate, specific conductance, and turbidity were performed at weekly intervals during the period from February to May. Most tests were performed using the Hach Chemical Company's methods.

Four stations were used during this study. Station #1 was located just before the juncture of Beaver Creek with the Des Moines River. Station #2 was located on Grimes Creek about 100 yards upstream from its juncture with Beaver Creek. Station #3 was located just upstream of the juncture of Grimes and Beaver Creek. The last station, #4, was located about one-quarter mile downstream of the juncture of Beaver and Grimes Creeks, far enough downstream to allow for adequate mixing of the two waters.

Mr. Miller participated in this study while a liminology student at Drake University.

During the course of our survey we found that many of the various water quality parameters we looked at were similar in both Beaver and Grimes Creek. Therefore, Grimes Creek had no major effect on the water quality of Beaver Creek.

The dissolved oxygen concentration was quite good, approaching 100 percent saturation at all times, varying mostly with changes in temperature. It was noted that the pH was slightly high but remained stable between 8-9. Turbidity of the stream increased as the stream flowed downstream. Other trends showed that rainfall caused an increase in both turbidity and coliform bacteria. It was felt that part of the reason for this was that the rain washed soil and other particulate matter into the stream, thus causing the increase in turbidity and in the coliform bacteria, as bacteria often adhere to soil particles. Associated with this rainfall was a decrease in specific conductance of the water which was apparently due to a dilutional effect because of the increased volume of water flowing in the stream at the time. The nitrate nitrogen remained within the 0-12 mg/l range which is within normal limits for a stream in this type of agricultural area. It was also noted that there was an increase in the phosphates and nitrate nitrogen in March which may, in part, be due to the spring thaw as well as the time of year when some of our farming population begin to work the fields.

All in all, it was felt that the stream situation at Beaver Creek was not considered to be grossly unusual as compared with the water quality of agricultural streams throughout the state of Iowa. We feel that more work needs to be done to study the effects that intensive agriculture, agricultural products, and chemicals have on water quality both in free-flowing and standing bodies of water.

Although this is perhaps a different type of "Save Our Streams" project than one ordinarily considers as part of the Izaak Walton League's SOS Program, we felt that studies of this type in a semi-scientific aspect should be considered. We also feel that working, private citizens in the Izaak Walton League could work well in conjunction with their local universities and some of their post-graduate students in understanding some of the more scientific aspects of water pollution. It was not our intention that this study make any great scientific or valid discoveries but it does make the point that private interested citizens can work with their universities in establishing a body of knowledge regarding the chemistries and the functions of the water in their neighborhood and increase the knowledge of their local Chapter about water quality.

THE POLLUTION CONTROL CENTER, OAK PARK AND RIVER FOREST SOUTH HIGH SCHOOL

by Edward C. Radatz*

A reference center for environmental education materials, classes for elementary schools, lectures to community groups, environmental workshop scholarship fund campaigns, inter-high school conferences, anti-litter campaigns, media coverage, letters and telegrams to legislators, circulating petitions, a water pollution detection "strike force," conservatory repair and painting, a paper pick-up program, a village environmental advisory committee, money-raising for a statewide environmental lobby—it's all in a day's work for a remarkable group of high school students in Oak Park, Illinois, who have set an award-winning pace consistently from 1970 to the present in environmental education for community action, under a dedicated faculty adviser.

Formation of the Center

The 1970 Conservation Workshop

After participating in environmental workshops at Southern Illinois University in 1969 and 1970, two student chairmen cooperated with faculty and administrators to plan the 1970 Conservation Workshop at Oak Park and River Forest High School in observance of the first Earth Day in April of that year. The workshop brought together conservationists, scientists, educators, and industry representatives in order to educate the students, faculty, and community to pollution problems and ecological concepts.

After the administration agreed to reschedule school classes for the entire week, students selected and contacted speakers who talked to history, science, and English classes on separate days. Each class heard speakers relating to the class subject so that teachers and students recognized the broad applications of environment to all subjects. For example, Attorney Joseph Karaganis, Assistant to the Attorney General, spoke to history classes concerning environmental legislation; Mrs. Samuel Rome of the President's Environmental Board spoke to science classes regarding technical aspects of water pollution; and Mr. Gunnar Peterson from the Open Lands Project talked to English classes about ecological concepts and personal lifestyles. In addition, all classes involved heard representatives from industry

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**Mr. Radatz is presently teaching biology and environmental science at Oak Park and River Forest High School, Oak Park, IL 60302. He was selected outstanding biology teacher by the National Association of Biology Teachers for 1978. He is active in many local and state environmental projects.*

in order to add perspective to industrial pollution projects. Over 4000 students, faculty members, and citizens heard several of these lectures during the week.

The Environmental Science Curriculum

As a result of the workshop, many students and teachers at Oak Park and River Forest High School realized the need for environmental education in the school and community. Along with several faculty members, the students suggested an environmental science curriculum and interdisciplinary environmental study to the board of education. Consequently, environmental science and field biology courses were instituted, and environmental topics are now stressed in earth, science, physical science, biology and AP honors courses in science.

The Pollution Control Center

After the 1970 Conservation Workshop, students received permission from the administration to establish an office in the school equipped with a telephone. The Pollution Control Center is open each school day from 8:20 a.m. until 3:20 p.m., with a student volunteer to answer the phone. Students may obtain free information in the form of pamphlets, periodicals, and books on almost every environmental topic. Cooperating with the media center, the center has compiled an excellent collection of books and audiovisual aids to supplement its current pamphlet file. The center has also recommended and helped to purchase equipment for science classes for pollution analysis. By providing a phone service, citizens and students in the community can call to request information on environmental subjects, speakers for their school or club, or other services provided by the center.

But the center has expanded from its original role as just an information source. Students, rather than just waiting for a phone to ring, use the center as an operations base for their many outside-the-office activities.

Environmental Awareness Education

Elementary School Lectures

High school students share their knowledge by giving lectures to local elementary schools which lack environmental courses. Teams of students lecture to both elementary schools and junior highs, grades kindergarten through eight. These programs center on basic ecological concepts and guidelines for children to follow both at school and at home, thus increasing their environmental awareness. Coloring books and buttons with ecological themes and lists of conservation suggestions are used with younger children; older children receive more sophisticated materials, and participate in question-and-answer sessions with the high school students. Teachers are also provided with follow-up materials, and are free to request additional information from the Pollution Control Center on subjects that correlate with current class study.

Study Lecturers for Local Clubs, Organizations

Many students have spoken to local clubs and other groups as part of the Pollution Control Center's community education program. Appearing before organizations such as the garden clubs, Illinois Federation of Sportsmen's Clubs, and the Daughters of the American Revolution, students present environmental ideas to the adults and inform them of the services of the center. At the same time, students benefit from the exchange of ideas with adults. Many of the groups students talk to have contributed to the Pollution Control Center or have helped to finance a student to attend a summer environmental workshop.

Students to Environmental Workshops

Sending students to summer environmental workshops, especially those at Southern and Northern Illinois Universities, has become an important aspect of the Pollution Control Center's activities. Several of the center's early chairpersons attended these workshops on scholarships from the Garden Club of Oak Park and River Forest, and reported on their experiences to other involved students at the high school. Subsequent officers believed that the opportunity to attend these workshops should be available to more than two or three students each summer. Not only would more students benefit from the workshop programs, but these students would also be able to use their increased knowledge to achieve greater environmental awareness at the high school itself. A decision was then made for the Pollution Control Center to establish a scholarship fund with the monies to be available to students from both the Pollution Control Center and the Biology Club. The establishment of this scholarship fund has drastically increased the number of students who have been able to attend workshops. In 1973, immediately prior to the establishment of the fund, only three students were sent to Southern Illinois University; in 1974, five were sent; and in 1975 the center was able to send 17 with some paying half of the costs. All students receiving scholarships give a presentation of their experiences and impressions to the Biology Club; in addition, those receiving scholarships from community groups, such as the garden club, also report to those groups on their experiences.

Funding of the Scholarship Program

The Pollution Control Center has used various methods to raise funds for its scholarship program and other expenses. The academic year immediately past saw the most ambitious effort to date; that is, the collaboration of the center with the gymnastic team in the latter's fund-raising "Routine-a-thon," in which a pledge is made for each routine a gymnast performs. All pledges collected by the Pollution Control Center were split 50/50 with the team. The center plans again to participate in the Routine-a-thon this current academic year.

Previous to the Routine-a-thon, the center held a tremendously successful T-shirt sale within the high school benefiting both the center and the Oak Park Conservatory. The shirt was designed by a faculty member's spouse who was a graphic artist, and was mass-produced by a commercial firm. The center also participated in a patch sale to

benefit both the Open Lands Project and the Pollution Control Center, selling over 1000 at Oak Park and River Forest High School alone.

Environmental Conference

The Pollution Control Center was instrumental in the formation of a student coalition which has had several meetings in Chicago under the auspices of the Open Lands Project. As a result of these meetings, a conference was held at Lake Geneva in October 1972 with the Federal Environmental Protection Agency, the Bolton Institute, the Cleveland Institute, and Open Lands as sponsors. The center was also instrumental in the formation of the several student coalitions formed out of the conference by high schools in Illinois and Wisconsin. Pollution Control Center delegates also participated in a Lake Geneva conference involving foreign students, sponsored by UNESCO and Open Lands Project.

Field Trips

In the autumn of 1973, three student officers and a faculty adviser to took part in an environmental cruise through the inland waterways of northeastern Illinois. Finding it very informative, a second cruise for the spring of 1974 was organized in which 90 faculty members and students participated, starting at the Wendella Docks at the base of the Wrigley Building. On board were representatives from the Metropolitan Sanitary District, Region V U.S. EPA, and the Chicago Department of Environmental Control, who called attention to various points of interest along the way. Following the success of this trip, a similar cruise was organized in the spring of 1975, with the same route and with similar officials accompanying the participants.

Student Council

Recently, the Pollution Control Center was instrumental in persuading the Student Council to form a special committee to deal with the growing litter problem at the high school. The center expects to work very closely with the new committee, and, although the center has undertaken numerous anti-litter campaigns in the past (a recent example being the emphasis on litter as the high school's theme for Earth Week 1975), the center believes that this will be the most successful, due to the cooperation of the Student Council.

Community Involvement

The Media

Since its inception, students involved with the Pollution Control Center have promoted environmental awareness through newspapers, a newsletter, displays, posters, photography, and radio and television coverage. Both local and major newspapers in Illinois have publicized the work of the center, including interviews with students and citizens involved. Students have also represented the school on

radio and television programs. The school newspaper, Trapeze, featuring articles on pollution, received the 1972 State Award for Environmental Journalism, sponsored by the Illinois Tuberculosis and Respiratory Disease Association. Trapeze also received the 1973 second place State Award for Environmental Journalism. Since that time, Trapeze has featured many environmental articles and has run special editions during the annual Earth Weeks.

Political Activity and Cooperation with Other Organizations

Recognizing the importance of environmental legislation on all levels, the students have concentrated on being informed, informing others, and expressing their views to elected officials and other influential people. Interested students write individual letters or help to compose official letters and telegrams, and make phone calls voicing the opinion of the center. By checking the Congressional Record, newspapers, and other sources, the students note the actions of politicians and other groups. The students attempt to deal directly with elected officials whenever possible. Numerous state and federal officials, state senators and representatives, and federal representatives have visited the high school and its Pollution Control Center. After listening to talks by these officials, students were able to question them concerning environmental legislation.

In addition, the students have asked organizations such as the Illinois Planning and Conservation League, the Clean Air Act Coordinating Committee, and the League of Women Voters, among others, to help them filter through confusing legislation. These groups alert students in time to act before crucial votes in both the State Legislature and the Federal Congress.

The students also work with these organizations on projects such as gaining support for the 1970 Illinois Water Bond Issue, when students distributed leaflets or obtained signatures for worthwhile conservation causes. Particularly significant was the effort by students to prevent the North Shore Sanitary District from discharging poorly treated effluent into the Des Plaines River. In one weekend, the students obtained over 1000 signatures of residents along the river demanding a hearing before the Illinois Pollution Control Board. The hearing was granted and the Pollution Control Center, along with other groups, demanded tertiary treatment for the effluent. The water quality standards were improved to require tertiary treatment as a result of these hearings. Also, students have been excused from classes to attend important hearings such as those on the Lake Michigan Bill of Rights, the Illinois State Master Plan for Environmental Education, and the Illinois Pollution Control Board.

The Pollution Control Center is a member of the Open Lands Project, the Lake Michigan Federation, the National Wildlife Federation, and the Clean Air Coordinating Committee. The center has also worked with such government agencies as the Youth Advisory Board of the Environmental Protection Agency.

Water Pollution

Students from the center have long been interested in the Des Plaines River, a large polluted river close to the high school. Students were instrumental in the formation and performance of several clean-ups along the river.

Following the Lake Geneva Conference in October 1972, several students from the Oak Park and River Forest High School became interested in the water problems of their area, particularly the nearby Des Plaines River. A canoe trip soon followed and the students observed an actual pollution violation while they were canoeing.

This violation sparked the students' interest in the water problem. The students soon decided to seek actively the water polluters and report them to the appropriate governmental agencies. Inside Cook County, the violators were reported either to the Metropolitan Sanitary District or to the Clean Streams Committee; outside Cook County, to the Illinois Environmental Protection Agency or to the Attorney General's office.

Using these agencies, students with cars began to cruise areas where feeder streams flowed into the river or into other streams, looking for observable, gross violations. The first weekend out, students found an oil discharge of approximately 50 gallons from a die-casting company. They immediately called the Metropolitan Sanitary District's dispatcher number and were met by an MSD official within half an hour. MSD immediately contacted the company and clean-up measures were taken by the offender company. In their trips, students found many actual company violations, including oil dumping by a truck firm, soap discharges from a car wash and bus company depot, and septic tank overflows, among many others.

No equipment was necessary. The upperclassmen made these observations because family cars were often available and these older students had drivers' licenses. The students worked without an actual faculty adviser and outside the official auspices of the Pollution Control Center, receiving only material support from the center. Teams usually went out on Saturday or Sunday mornings to avoid company personnel and the threat of illegal trespass. Results, using the proper government agencies, were excellent. Gross violations were numerous and easy to locate, and, most of all, the students involved were very enthusiastic, with a feeling of accomplishment when a polluter they had found was forced to clean up. However, due to the obviously illegal and occasionally dangerous aspects of this "Strike Force" activity, it was never formally approved or sanctioned by the Pollution Control Center. It gradually died as its main participants graduated and were replaced by less daring, but not less environment-conscious, student officers.

The Conservatory

In 1970 there were plans to demolish a local conservatory. Working with Mrs. Elsie Jacobson of the Village Beautification Committee and other groups, students campaigned to save the conservatory for its

educational and recreational value. Because the building needed major repairs, students worked for over 100 hours to paint, repair, and gain support for the conservatory. The center donated money to the conservatory and encouraged other groups to contribute. As a result of student and adult action, the conservatory was preserved. Currently, a variety of educational programs there provide information for elementary schools, high schools, and colleges, as well as for residents of the community. Crews from the Pollution Control Center assist at the conservatory when the need arises. Students from Field Biology 1973 produced a film on the flora of the Chicago area which is presently being used at the conservatory. These students also originated the idea of the T-shirt sale to benefit both the conservatory and the Pollution Control Center.

Permanent Recycling Program

The students of the Pollution Control Center helped to start a permanent recycling program for newspapers, glass, metal, magazines and cardboard. Beginning with paper recycling, a final site for glass, metal, and paper was established in June of 1971. The school and surrounding communities contribute materials to this project, which has since been taken over by the Village of Oak Park. The recycling program yields a net profit of over $1,800 a year to the village.

Students can claim as much credit for the success of the recycling program as anyone else. In the words of the glass program student coordinator, "Student manpower kept the bins alive during the first year." As a tribute to student involvement, only students are employed by the village to operate the recycling bins.

Students from the Pollution Control Center have also been, and still are, providing a free pick-up service of newspapers for senior citizens in Oak Park and River Forest. Several years ago, students wanted to organize a new program. A model trial recycling program was organized. For four weeks, 30 students picked up separated garbage from a five-block area in the community. By collecting cans, glass, and paper on a house-to-house project, students gained information which they applied to PPUP (the Paper Pick-Up Program), a follow-up project. With PPUP, students and community Jaycees collected newspapers door-to-door for a 20-block area, every two weeks, for a two-month period. Due to certain difficulties encountered by the students, however, PPUP was never adopted by the Village of Oak Park, the ultimate objective of the student action.

The Environmental Advisory Committee

Early in its existence, the Pollution Control Center supported an Environmental Advisory Committee for the Village of Oak Park. The committee was elevated to full commission status in February 1974, and since January 1973, the adviser of the Pollution Control Center is an adviser to the commission. With a student among its members (by ordinance), the commission gives advice to the Village Board on such matters as the recycling center, solid waste disposal, and energy usage.

Johnny Horizon

Johnny Horizon was conceived by the Department of the Interior to help clean up America for our bicentennial celebration in 1976. The Pollution Control Center helped establish Johnny Horizon Programs in the elementary school in the community. Schools conducted programs such as flower planting, anti-litter project fairs, film making, "Litter Awareness Day" programs, and individual classroom projects. Simultaneously, the Pollution Control Center began a community-wide anti-litter campaign with the distribution of posters and buttons. Hopefully, these programs will bring the environmental movement to every citizen, and recruit his active participation in pollution control.

Student Ecology Corps

In the fall of 1976, a new environmental group was formed as an offshoot of the Pollution Control Center and Biology Club. It was organized and is run completely by students outside of school as a non-school sponsored activity. For this reason, the Student Ecology Corps can get involved politically in environmental legislation. In observance of Clean Air Week, the Corps sponsored a bike-a-thon in conjunction with the Chicago Lung Association. The Pollution Control Center also offered its support for the success of the fund-raising project.

The second year of the Student Ecology Corps' existence led to even further involvement in the environment. Besides keeping in touch with national and statewide decisions concerning pollution and natural resources through student "pet projects," the students worked to raise money for the only environmental lobby in the state, the Illinois Environmental Council. Student Ecology Corps was the first high school group to be on the advisory and decision-making board of the council.

During the spring of 1978, the Student Ecology Corps established "Community Awareness Week." Working through the Pollution Control Center and Biology Club, such activities as a high school "No Smoking Day," a community "litter pick-up day" and presentations on different ecology matters were organized in an effort to raise environmental consciousness. The Student Ecology Corps' great success in its first two years typifies the energy and interest inspired by Pollution Control Center members.

Recognition of the Center's Achievements

On the basis of these accomplishments, the Pollution Control Center entered the Presidential Environmental Merit Awards Program, operated by the Environmental Protection Agency to provide recognition for outstanding high school environmental work. The Pollution Control Center was then honored in April 1972 by its selection as one of four high schools across the nation to receive the first Presidential Merit

Award. Student coordinators Nancy Stockholm and John Rudzinski were accompanied by the faculty sponsor to Washington, DC, where a three-day visit was climaxed by the presentation of the awards by Mrs. Julie Nixon Eisenhower in the White House Rose Garden. Upon their arrival home, these three and the Pollution Control Center were again honored, this time by House Resolution 598 of the Illinois General Assembly, honoring the Pollution Control Center for its work. Representative Raymond Welsh presented the resolution to the center. The Pollution Control Center also received the Presidential Merit Award in 1976 and the Award of Excellence from President Carter in May 1977.

The Pollution Control Center was again honored in May 1973 when it received the President's Environmental Award for Outstanding Achievement. Also, in June 1973, the Pollution Control Center was honored by its selection as representative of the State of Illinois in a national competition sponsored by the Eco-America Awards Program of Keep America Beautiful, Inc. The faculty adviser and student director John Rudzinski were guests of a three-day Eco-America seminar at Catoctin Mountain National Park near Thurmont, Maryland.

For the third year in a row, the Pollution Control Center was honored with the President's Environmental Merit Award, presented in May 1974. The Pollution Control Center also received the first Environmental Service Award of the Region V Headquarters of the United States Environmental Protection Agency, and the faculty sponsor was also recognized for his meritorious service.

In 1975, the Pollution Control Center was awarded the Presidential Environment Award of Excellence and, for the second year in a row, also received the Region V U.S. EPA Award for Environmental Service. The faculty sponsor also received the Region V U.S. EPA Environmental Quality Award in the field of environmental education.

In December 1975, the Pollution Control Center received the Distinguished Service Citation in the Youth B Category of the nationwise 1975 Keep America Beautiful Awards Program, sponsored by Keep America Beautiful, Inc. To accept the award, the faculty sponsor and student director John C. Fanta attended KAB's national convention in Washington, DC, December 3-6. While in Washington, they were also congratulated by Congressman Henry J. Hyde, who also featured the Pollution Control Center in his quarterly constituent newsletter.

Again the Pollution Control Center received the Presidential Award of Excellence in 1976 and in May of 1977.

SOUTHWEST ENVIRONMENTAL SERVICE

by Priscilla G. Robinson*

In general to expand the public's role in developing policy on land use planning and the use of natural resources, and currently to build grassroots support for an effective air quality plan for Arizona—these are the environmental education goals of the Southwest Environmental Service, an environmental clearinghouse funded primarily by a Tucson family foundation.

Southwest Environmental Service is an environmental clearinghouse which was organized in July, 1974 and is funded primarily by a Tucson family foundation, the Wilson Foundation. The staff consists of two full-time employees—the director and a secretary. Part-time personnel assist in research, writing, and organization of specific projects. A nine-member Board of Directors sets policy.

Southwest Environmental Service provides research and educational services to neighborhood associations, governmental agencies, schools, service clubs, and the general public. Individuals and groups frequently contact the service for assistance in addressing environmental and planning issues in the community. We also bring problems to the attention of groups which might be interested in taking action on a specific problem.

Goals of the Organization

The principal goal of Southwest Environmental Service is expansion of the public's role in developing policy on land use planning and the use of natural resources. We accomplish this by increasing the community's understanding of issues and by assisting governmental agencies in designing better citizen participation programs. We research current issues and make information available to concerned citizens, enabling them to influence decisions more effectively. We pay special attention to the decision-making process because governmental procedures often create obstacles to citizen participation. We supplement the activities of community organizations whenever possible in order to reinforce and strengthen existing groups.

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*Mrs. Robinson has directed the activities of Southwest Environmental Service, Tucson, AZ 85702, since 1975. Her major interests are land use planning and citizen participation techniques.

Activities of the Organization

The primary activities of Southwest Environmental Service are research and dissemination of information. We maintain a library covering a wide range of environmental and planning issues which is available to the public. We use many different methods of spreading information including workshops, special mailings, informal meetings, and the media. Members of the staff write regularly for the newsletters of environmental and community organizations.

Major projects have included two workshops funded by grants from the Office of Environmental Education, U.S. Office of Education, and an air quality workshop funded in part by a grant from the National Clean Air Coalition. We designed the first two workshops, one on a land use plan and one on Tucson's water system, to test techniques for soliciting citizen participation in the formation of public policy. Both workshops were well attended and successful. Local planning departments and other agencies continue to utilize the process and technique developed for use at these workshops in making policy decisions.

One of our more successful methods of disseminating information has been the formation of working groups on specific issues such as a proposed change in a zoning ordinance or a plan for a waste water treatment plant. Membership of these groups is always open, but we attempt to identify all of the individuals and organizations that have an interest in the issue including the staffs of affected local, state, and federal agencies. Southwest Environmental Service convenes the meetings, researches the issue, and presents the information to the group in a concise form. We assume responsibility for keeping the group up to date about hearings and current governmental decisions. The objective is to develop an informed group that will testify at hearings, write letters, or take other actions deemed necessary. The input of working groups has influenced at least three local planning issues which were highly technical, but did not require the political impact of large numbers of people.

Southwest Environmental Service is currently involved in expanding a clean air action project to build grassroots support for an effective air quality plan for Arizona. There is an urgent need for a well-coordinated educational effort to inform citizens of their right to participate in planning for clean air and the public participation opportunities provided by the 1977 Amendments to the Clean Air Act. We are committed to a program of research and education to promote citizen understanding of the federal legislation.

ORGANIZED CITIZENS PASS THE BOTTLE BILL IN IOWA

by Jay P. Sherman*

"In Iowa," says the author, "the Bottle Bill is an idea whose time has come." That may be, but it didn't come without some exquisite work by Iowa's Community Action Research Group, a non-profit public interest organization. This is a blow-by-blow account of how a citizen coalition can take on a professional lobby—and win, with grassroots education and two-fisted legislative tactics.

The Community Action Research Group (CARG) is a non-profit corporation whose purposes include promoting the public interest through research, advocacy, education, and media work. Rather than being a membership group, CARG primarily assists existing citizen groups, with whom it agrees, to be more effective in working through democratic channels for social change.

CARG works primarily at the state level through lobbying, litigation, and use of administrative procedures (petitioning state agencies). The group focuses on the following issue areas: energy and utilities; transportation and the environment; and food and agriculture.

While CARG is one and a half years old, one of its earliest priorities was the passage of beverage deposit legislation in Iowa. The bill had been pending for a number of years, and CARG staff had personal experience and commitment to the issue which transcended their tenure with the newly-formed organization.

Commonly referred to as the Bottle Bill, this legislation, by placing a minimum five-cent deposit on beer, soft drink, and liquor containers, will facilitate the re-use and recycling of the more than one billion bottles and cans that Iowans use each year. Studies have consistently shown that keeping these containers within the beverage system will result in greater employment opportunities, resource savings, energy savings, and reduced litter and solid waste.

The choice to work on the Iowa Bottle Bill reflected CARG's strong positions on energy conservation and protection of the environment. The issue presented an excellent opportunity for CARG to initially attempt to put its philosophy to action: assist a concerned citizenry in a lobbying battle. The concept of the Bottle Bill was widely known and understood across the state.

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*Mr. Sherman is the former Director of Public Affairs for the Community Action Research Group, Ames, IA 50010. He has been involved in the Iowa Legislature as a public interest lobbyist for the past four years and has taught action-oriented courses at the University of Iowa.

The Bottle Bill is an issue where people are not as easily bedazzled by special interest economists and attorneys. It is an issue that touches all people's lives in one way or another. It is not an abstract concept to people, but one to which just about everyone can relate. It presented to the newly-formed Community Action Research Group a perfect issue around which to organize.

Although the Bottle Bill had been introduced a number of years earlier, 1977 was the first year it had ever been able to get committee approval. The opposition was strong and included the rare, but potent alliance of the Iowa Manufacturers Association and the Iowa Federation of Labor. In January of that year, every member of the Iowa General Assembly received a letter jointly signed by the Presidents of these two seldomly aligned organizations voicing their strong objections to the bill. Their lobbyists joined those of the grocers, beer distributors, soft drink bottlers, and container manufacturers in a solid legislative program that heretofore prevented the Bottle Bill from being fully debated by either house of the legislature.

The anti-Bottle Bill opposition was buoyed by its successful track record in other states: only two states, Vermont and Oregon, had been able to win their respective battles for deposit legislation through the legislative process after years of struggle and introductions of bills in almost every state in the nation.

In the spring of 1977, a loose conglomeration of citizen organizations led by soon-to-be CARG staff people and an enlightened and prominent Des Moines banker were able to salvage a compromise piece of legislation. That legislation embodied the marriage of the deposit concept with an industry-sponsored "litter tax" which industry lobbyists intended to substitute for the Bottle Bill. The "compromise" proved to be unworkable, but served the purpose of keeping the bill alive.

The next stage in the legislative process was critical: getting a "clean" Bottle Bill, by amending the "litter tax" out, through the Senate Energy Committee. A win at this battle, it was thought, could win the war for Bottle Bill passage.

It was at this point CARG decided a strong, broad-based coalition must be built to assure Bottle Bill passage. CARG knew the opposition would be more vigorous than ever, and that the concerned citizen groups must be able to deal with as tough a lobbying campaign as has ever been fought in the Iowa Legislature.

Knowing that the key Senate committee would be convening in the fall, CARG spent the summer educating and encouraging various citizen groups to band together, share resources, and be prepared to pressure this nine-person decision-making body in a statewide, coordinated effort. CARG supplied the lobbyist and funneled legislative developments to the concerned groups.

Finally, Iowans for Returnable Beverage Containers emerged, consisting of a variety of groups including environmental organizations,

church groups, the state association of county officials wildlife groups, garden clubs, high school students, and general public interest groups. (See also EAF case study, pp. 192-200.)

The member groups were encouraged to make financial contributions and individuals were solicited for donations. One of the coalition members had Bottle Bill buttons made and these were sold to help raise money. Various individuals with access to WATS phone lines made them available to the coalition from time to time. Some secretarial work and printing was donated by concerned individuals.

CARG was forced to subsidize some of the Bottle Bill effort, since the Bottle Bill proponents were unable to raise all of the money necessary to cover the costs of the effort. CARG was able to do this because it had more projects and issues than merely the Bottle Bill and, correspondingly, could tap other sources of income.

CARG's lobbyist was able to identify those members of the Senate Energy Committee who particularly were undecided on the issue and who might be swayed by visible signs of citizen concern in their home district. A number of trips to those identified districts were scheduled and taken. Such tasks as meeting with local affiliates of coalition member groups, contacting the media people of the area, talking to large groups of students (a group unusually concerned about the issue), and generally reaching local people by any means practicable were completed.

One district trip involved the CARG lobbyist debating one of the previously undecided members of the Committee at a meeting set up by local contact people through the coalition.

The CARG lobbyist, through deep involvement and updates on the pertinent information, was better-informed on the various Bottle Bill questions than the Senator. The audience was stubborn and vocal in its demands that the Senator support their position. This combination of more supporting information and direct constituent pressure forced the Senator to lend his public support for the Bottle Bill for the first time. A significant victory was won. The Senator was not only a key committee member, but the only working grocer in the Iowa Legislature. His support hurt the credibility of the organized retailers who opposed the bill.

The situation in Iowa was attracting attention outside of Iowa by out-of-state special interest groups, who were by now flying in their representatives and, in some cases, hiring local Iowa lobbyists to fight the legislation.

The Bottle Bill opposition felt that the implications of an Iowa Bottle Bill were greater than just in Iowa. They feared a momentum may be growing that would encourage other states and even the Congress to adopt deposit legislation.

Just as the opposition noticed the Iowa developments, Bottle Bill proponents across the nation were aware of them. Environmental Action Foundation, a Washington, DC based group with similar concerns

as those of CARG, felt strongly enough about the chances for an Iowa Bottle Bill that they sent a spokesperson from their National Clearinghouse on Deposit Legislation to Iowa for a week to help CARG generate support.

The Clearinghouse spokesperson brought the latest reports and facts on this issue to Iowa through a brief meeting with the already supportive Governor, key legislators and the Senate Energy Committee itself. She lent her perspective and enthusiasm to one of the monthly meetings of Iowans for Returnable Beverage Containers.

In October of 1977, a Bottle Bill stripped of the industry-supported "litter tax" provision gained the support of the Senate Energy Committee. The Bottle Bill would then be debated when the Legislature reconvened the following January.

The grassroots trips continued until that time and a newsletter was mailed to a quickly growing mailing list of Bottle Bill supporters to keep them informed.

In December of 1977, industry sources revealed to CARG that the Bottle Bill opposition, then referring to themselves as the "Citizens Committee to Eliminate Litter in Iowa," was planning a highly-financed media blitz to be commenced immediately prior to Christmas running through the early weeks of the coming session of the Iowa Legislature. The media effort was a desperate, last-minute campaign aimed at misleading and confusing the public. It was obviously based upon similar media efforts used by the opposition in other states where the battle had been close.

The media campaign included radio and television spots, as well as advertisements in the print media, aimed at convincing citizens to write their legislators and urge them to vote against the bill.

CARG took a number of steps to try to counteract the campaign. Just a couple of days before the campaign was to begin, CARG organized a press conference which revealed the forthcoming media campaign, gave out sample scripts which it had obtained through its sources, and countered the misleading statements made in the advertisements with information from official documents and reports. The CARG spokesperson was accompanied by the prominent banker active in the coalition, and an official from the Iowa Department of Environmental Quality. This was designed to increase the credibility and coverage of the news event. It was widely covered.

CARG wrote the major broadcasters of Iowa and gently reminded them of their obligations under the Fairness Doctrine. Those obligations for broadcasters regulated by the Federal Communications Commission (FCC) include adequately airing the various sides of a controversial issue. When one side of a controversial issue purchases air-time from a given broadcaster, that broadcaster must, in some fashion, present the other view.

CARG inexpensively made its own broadcast spots, made them available to the media and eventually received hundreds of free ads, numerous

interviews and invitations to some of the most well-watched and listened-to talk shows in the state. As an example, the most powerful radio station in Iowa gave to CARG, at no cost, a number of spots equal to that purchased by the "Citizens Committee to Eliminate Litter." This particular utilization of the Fairness Doctrine gave Bottle Bill supports over $3,000 of free radio time.

By mid-January, the Bottle Bill was the talk of Iowa. The issue had reached its peak of prominence. Most Bottle Bill supporters agreed that the desperate industry media blitz had backfired.

The momentum was manifested when the Iowa Senate passed the Bottle Bill by a 39 to 11 vote in early February of 1978. The CARG lobbyist continued to alert the members of Iowans for Returnable Beverage Containers of legislative progress and of legislators who still needed to hear from them. (Since the Senate and House versions of the bill were different, the process continued until the two houses finally came to agreement.)

In the spring, the Governor held one of the largest bill-signing ceremonies in the history of Iowa. Many coalition group leaders were invited to the event. A number of these groups, still tasting victory, are anxious for another successful environmental victory this coming year.

There are many factors that contributed to the emergence of Iowa's Bottle Bill. Politically, liberals and conservatives, farmers and city folk, Democrats and Republicans supported the Bottle Bill. Individual legislators, the leading daily newspaper of the state, and the Governor all deserve credit for standing united in their support for this legislation.

But the greatest credit should go to the citizen movement of Iowa. Through the coalition, the will of the majority of Iowans was effectively made known to their elected representatives and contributed to the overwhelming defeat of the formidable special interest groups opposing the legislation.

The Bottle Bill is an idea whose time has come. The Iowa Legislature has passed the measure and the people will make it work.

THE STRANGE CASE OF HOLIDAY ISLE

by Jean Smith and David E. LaHart*

As a nation of "joiners," Americans sometimes get the idea it takes an organization to make things happen. This case study, however, does not record the efforts of any identifiable group. It follows the efforts of a student and her ecology class at Ft. Walton Beach (Florida) High School. The story shows what a motivated 16-year-old with a sense of purpose and stubbornness can accomplish. Jean Smith is now a sophomore at Okaloosa-Walton Junior College—and continuing her fight for Holiday Isle. If environmental educators can continue to impact students, we can look forward to a new generation of doers.

Suddenly a great swarm of birds rose up just ahead of us. Terns. They hovered overhead, white specks against the azure sky, sometimes diving down toward us. Their defensive behavior indicated it was nesting time. We quickly retreated to an area outside their home range and watched with binoculars. Later, as we walked back to our car, talking excitedly about our discovery, we noticed the back of a nearby billboard. With a tinge of alarm, we quickened our steps to read it. The sign announced this area was going to be the site of a new restaurant and marina. We knew our terns were endangered throughout their range, but would they vanish from here, Holiday Isle? How could we possibly prevent the destruction of this nesting ground? This question was to lead us through local, county, state government, and finally to the United States Congress.

An Environmental Description

Holiday Isle is located on Florida's panhandle about 50 miles east of Pensacola, near Destin. The Isle lies in the Coastal Plain and is underlain by beds of sand, silt, limestone, and clay that dip gently seaward. Most of these sediments were deposited during periods of marine inundation. The most distinctive surfaces are the Pleistocene marine terraces composed of fine to coarse light-colored sand, extending to a depth of up to 100 feet. Because the sand is 99 percent quartz, it is very white.

On Holiday Isle, the fury of the sea meets the land and its biological communities with an endless pressure for change. Sand is

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*Ms. Smith is a student at Okaloosa-Walton Junior College and the winner of the 1977 Youth Conservationist Award from the Florida Wildlife Federation for her continuing efforts on behalf of Holiday Isle; Dr. LaHart is the Director of Environmental Services, a Florida-based consulting firm (Tallahassee 32304), and a self-proclaimed eco-freak.

continually moving. As the wind blows across the island, sand catches on the plants and dunes are built. The endangered sea oat is one of the common plants helping the dunes grow larger. Its extensive root system works to hold the dunes in place while the flowering tops catch the windblown sand, forming the natural dunes that protect Holiday Isle against storm tides.

On a clear, windy day, the sea oats' leaves can be seen glistening in the sunlight. Salt spray is constantly wetting everything. Only plants that can withstand the salt concentrations of sea water, survive. In addition to sea oats, several other plants live in the dunes. Panic grass, cord grass, sand pea, and water dollar are just a few. Several species of succulent plants grow on the slope of the dune facing the beach. Insects, such as scavenger beetles, are common in this upper beach area and feed on dead material brought ashore by the tides.

A varied animal population strives to make their home on the drifting dunes. Animals typical of this Gulf beach community have become adapted in structure, physiology, life cycle, and behavior patterns. The environmental stresses are so great, that only a few animals are able to succeed in these difficult surroundings. The sand dollar, gray auger, coquina clam, and lettered olive are a few of the shelled animals found here. Several Crustaceans like the mole shrimp, ghost crab, speckled crab, and mole crab also live here. Sources of food include plankton, organic film, and the multitudes of microscopic animals and plants found on and among the sand grains.

Many species of birds are found on Holiday Isle. Some of the more common ones are the Eastern Willet, the Sanderling, and the Laughing Gull. The threatened Least Tern, the endangered Cuban Snowy Plover, and the Black Skimmer are known to nest here. The Least Tern is in the gull family, but is generally smaller and more graceful than gulls. Their white foreheads, delicately sculpted yellow beaks, and legs make a beautiful picture as they hunt along the shoreline. They swoop, hover, occasionally plunge, but only rarely land on the water when they hunt. Terns are gregarious nesters and a single square yard of nesting turf may support three pairs. The Cuban Snowy Plover, also a common nester, has a somewhat plump body and pigeon-like bill, which is surprising for a wading-type of bird. Holiday Isle is an ideal example of the varying habitats in which the Plover thrives. They inhabit beaches, mud flats, and grassy fields. The ponds of the western end of the Isle are surrounded by mud flats and a grassy field.

The Black Skimmer also nests on Holiday Isle. The Skimmer's bill is its most striking characteristic. It is red with a black tip and a protruding lower bill. Like most shore birds, the Skimmer can be seen gliding over the water in search of food early in the morning and in the evening. The Skimmer slices the surface of the water with its lower bill; when it comes in contact with small crustacea or fish, the Skimmer clamps its upper bill shut.

The Tern's, Plover's, and Skimmer's nesting habits are quite similar. All nest in areas with some grass cover and the many broken shells

that are characteristic of the area. The nests are simple indentations in the beach. Holiday Isle provides an uncommon blend of feeding and nesting habitat for these beautiful forms of life—life that represents a freedom humankind has admired for eons.

Holiday Isle is changing. The patterns of coastal islands are constantly being remolded by ocean forces. These forces have been respected, even worshipped by some cultures. Accretion and erosion are the major ocean forces acting upon the Isle. Accretion is the gain in land over a period of time and erosion is the loss of land. The shoreline of Holiday Isle has experienced both accretion and erosion. Historically, the Isle was the part of Santa Rosa Island referred to as Norriego Point in the 1886 topographical survey. This survey depicts a pass a few hundred feet east of its present location. This new pass (East Pass) was forged by a hurricane in April, 1928. Construction of jetties on the east and west sides of East Pass and dredging operations by the United States Army Corps of Engineers have worked to keep this pass open. Prior to jetty construction, East Pass had two major channels on either side of a sedimentation island.

Since construction of the jetties, the beach area has increased considerably. This growth has occurred mainly on the Eastern beach, where the sedimentation island joined the mainland. The joining occurred because of the jetties' construction and dredging operations of the Corps (8).

This beach growth is apparent when the present area is contrasted with its size before the jetties. A preliminary project map prepared by the Corps, shows that the land from north to south was 1200 feet wide in 1961. Today it has grown to just over 2000 feet.

In an attempt to preserve this nesting area, we wrote several letters. Agencies such as the Environmental Protection Agency, Florida Department of Natural Resources, and the Game and Fresh Water Fish Commission were the main thrust of our correspondence. We also contacted our elected representatives, mainly to make them aware of the Holiday Isle issue. We then conducted a telephone survey of local residents. Seventy-eight percent of those contacted were opposed to further development on Holiday Isle (4). It became more apparent that the major factor blocking the establishment of the preserve was the question of ownership. We talked with our ecology teacher, Margaret Privette, and asked her where we might find information about ownership. She suggested records at the county courthouse. As we dug deeper into the courthouse files, we saw that we would need someone to help us interpret the confusing and many times conflicting jumble of information we had found.

We had received an offer to give a presentation to the Destin Alliance, a group representing many local organizations. Hoping we might find help, we presented what we had found and showed a chart delineating the various claims to the western portion of Holiday Isle. We discovered a piece of land listed on the tax rolls as belonging to the State of Florida. It was three years later that we realized the importance and meaning of this description. An Okaloosa County

Commissioner, Mike Mitchell, attended this meeting and kindly offered his assistance with county government. Through meeting with Mitchell and various newspersons, the story behind the jumbled information began to unfold.

Land Swapping and Horse Trading and Politics

Holiday Isle was a part of Santa Rosa Island until April, 1928, when East Pass was formed, separating Holiday Isle and Santa Rosa Island. Santa Rosa Island was federally owned until 1927, when the government offered to the three counties bordering Santa Rosa Island the opportunity to purchase those portions lying south of the existing county boundaries. Santa Rosa and Okaloosa turned the offer down and Escambia County purchased the entire island. In May, 1947, Escambia County agreed to sell Okaloosa County that portion of the island including Holiday Isle, south of Okaloosa boundaries for $10,000 (1).

Even before that purchase was finalized, United States Representative Robert Sikes of Florida introduced legislation transferring 875 acres of the land to the county for public recreation with an automatic reversion to the U.S. government if a "recreation-only" clause were violated. The bill (H.R. 3735) was passed by the 80th Congress.

In 1953, the Okaloosa Island Authority was formed to manage this newly acquired land. In 1955, the Authority agreed to lease Holiday Isle to a local investor to develop an amusement park. The 99-year lease sold for $100. This action outraged local residents who expected the land to become a public park. The investor ignored the public and immediately sold the lease for 60 of the acres to C.B.S. Development Corporation for $60,000. C.B.S. was incorporated in 1957 with Representative Sikes, former state House President Newman Brackin, and Ben H. Cox, as principals.

On October 23, 1962, Sikes introduced a bill (H.R. 7932) that deleted the reversion clause and the key words "for recreational purposes only" from the original legislation. This opened the way for the commercial development of Holiday Isle, free of any possibility the land might revert to the government.

Between 1958 and March 19, 1974, C.B.S. Corporation reported gross receipts of $1,987,914.57 from development activities on its 60 acres of property. Sikes has denied expecting or receiving benefits as a result of his two bills affecting the property and has emphatically denied any conflict of interest (2). In 1976, however, Sikes was reprimanded by his fellow congressmen for conflict of interest. Holiday Isle was just one of the factors leading to his reprimand (3). In June, 1972, C.B.S. Corporation dissolved and transferred its assets to White Sands Investments Corporation for $600,000.

A pair of easements granting the Corps of Engineers permission to pump spoils from dredging operations in the East Pass channel raised questions about tax-emempt land. An easement is limited-use permission to use property for specifics such as sewers, electric power and water lines. In this case, the Army engineers were permitted to deposit spoils (land) from the channel.

The Corps had been dredging the pass for several years, clearing away deposits left by the sea. When a private lease was acquired by C.B.S. in 1958, the Corps had to obtain an easement to continue pumping its spoils onto Holiday Isle. This first agreement allowed use of a public park at the extreme western tip. Then in 1967, the Corps and C.B.S. Corporation signed another deed containing a "perceptual easement". This easement was an open-ended and unlimited granting of permission to pump spoil on privately leased land. The document allowed the construction of the jetties, which led to buildups of sand, greatly expanding the area of Holiday Isle. That deed, signed on September 19, 1967, was never filed or recorded. Nevertheless, for the next six years, the Corps carried on its dredging operations. The spoil-pumping further increased the area of the property.

In June, 1973, a new easement appeared, was signed, and recorded. A major difference between this and the previous document is the shrinking of the "perpetual easement" from 64 acres to about 7 and allowed a majority of the old spoil areas to revert to the previous owners on a specific date or when the spoil reached 16 feet above sea level.

Leases on the property built by the spoil and no longer under the easement were promptly sold. Two banks held leases as collateral on loans. The First National Bank of Miami held a $1.875 million mortgage on about 37 acres while the Citizens and Peoples National Bank of Pensacola held a $181,000 mortgage on another. In spite of the mortgages and the new easement, the land was listed on the tax rolls as belonging to the U.S. Government and, thus, exempt from more than $25,000 in taxes each year.

Two more parcels of property were listed on the tax rolls as county property but the land records indicate they, too, were privately owned. These parcels were described as easements for access to the Gulf. The land records indicate that the easements belonged either to the dissolved C.B.S. Corporation or the White Sands Development Corporation. The taxes, if levied, would have totaled more than $1100 per year.

By this time, the media were becoming interested. Local and state newspapers were contacting us for information and leads. Mass media reporters visited and asked questions. We had built a solid case with a foundation of facts that could be collaborated and kept copies of everything. "60 Minutes," the news program, did a story about Representative Sikes and Holiday Isle became national news. When the New York Times editorialized about Sikes, his constituents began to resent "outside" interferences and Sikes easily won election to his 18th term. We were afraid the terns and the skimmers and the plovers would be bulldozed away.

The State Steps In

In May, 1975, the Okaloosa Island Authority, the County Tax Assessor, and the State of Florida launched investigations to clarify the ownership of the spoil pumped up by the Corps and the legitimacy of tax-exempt status for privately-leased land covered by government

easements (5). As a result of these investigations, the Florida Department of Natural Resources laid claim to several sections of Holiday Isle. These sections included the land east of the east jetty and approaching the new development, Jetty East Condominiums, bottomlands to two lakes, accreted beach areas, and the land designated as a park. The 37 acres of land eastward of the jetty were the same acreage that had a $1.875 million mortgage (6).

The tide was turning. Officials in the Florida capitol were aware of the manipulations and deals that had been made and were taking steps to reverse the pirating of public lands. A local newspaper joyously announced "State Lays Claim to Holiday Isle." We had a party to celebrate. How naive! The politicians were working while we celebrated and six months later we were hit in the face with the returning tide of political power.

We learned from "an informed source" that the Department of Natural Resources would reverse its stand and recommend that the State of Florida relinquish any claim it had to Holiday Isle. The Department would make its request to the Governor and Cabinet. Undoubtedly, some of the Cabinet members had been contacted; political favors were being collected. Local politicians favorable to our views were contacted and asked to "get to" Florida's Cabinet officers. Mailgrams and letters began to pile up on officials' desks. Conservation organizations, including the Florida Wildlife Federation, were enlisted in our campaign to prevent a tragic loss. And when the Department made its recommendation, our lobbying efforts were successful. Attorney General Robert Shevin asked for a six-month delay and ordered the Department to continue its research; and, if they found private investors indeed owned the land, to find a way of purchasing it for public use. The "General" proposed the use of recreational or Environmentally-Endangered Lands Acquisition funds. Since then, the Department has reannounced the state's claim to sections of Holiday Isle (9). Their claim in June, 1978, included the two lake bottoms, the undisputed park land, and the lands seaward of the westernmost pond (10).

The state's claim is based on several points. The support for their bottom lands claim comes from the Submerged Lands Act of 1953, which says the state owns all lands below the mean high water mark for three leagues into the Gulf of Mexico. State claims to the lands seaward of the west pond are due to accretion to the sedimentation island, joining it to the mainland of Holiday Isle. In the case of accretion, new lands belonged to the upland owner. With Holiday Isle, the upland owner appears to be the State of Florida because the sedimentation island emerged in the middle of the East Pass.

It is interesting to note the discrepancies between the Department of Natural Resources" August, 1977, claim and their June, 1978 claim. The more recent claim fails to include the lands east of the east jetty (the mortgaged land). Florida Statute 161.051 states that property accreted because of the presence of a jetty or any other type of protective structure is the property of those who installed it. This land should also belong to the state.

This issue is far from being resolved. Attorney General Shevin speculates that the Department of Natural Resources and the investors will settle their dispute by the consolidation of state holdings. The investors are anxious to settle out of court and the Department wants to resolve the ownership question before presenting Holiday Isle to the Cabinet a second time (11). When the state consolidates its claim, it will have the opportunity to preserve a very uncommon and beautiful piece of land—Holiday Isle.

The education gained through our involvement is equal to the importance of our involvement. We have managed to keep this issue before the public and state officials. In doing this, we have given Holiday Isle a chance to continue as an unspoiled, critical area of land. To keep Holiday Isle before the public, we have worked with the media. To keep this issue before state officials, we attended meetings, wrote letters, and met with many bureaucrats. These activities have provided an unequaled education. Involvement is the best teacher of all. Our actions have combined to create within us the belief that we must not stand by and helplessly watch the destruction of our surroundings. Hard work, tenacity, and knowing you can make a difference will save Holiday Isle and our environment.

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THE LEAGUE OF WOMEN VOTERS IN GREEN BAY

by Cora Stencil*

If anybody "invented" modern environmental education, it was the League of Women Voters. So early as 1956, LWV selected as a national study item "conservation," comprising water quality, air quality, and solid waste management. The topic was restyled as "environmental quality" in the 1960s. More recently have come related national study items on human resources, international relations, land use, and energy. This is a case study of what those national study items translate into at the local and state levels, told by an exponent of "the four 'ates'--educate, participate, legislate, administrate."

The main purpose of the League of Women Voters (LWV) is to encourage citizen participation in government. We are organized on a local, state and national level to study issues and make our findings available to all citizens to help them become informed and to better understand the many complex issues before them.

Since this particular paper is aimed at Public Involvement in Environmental Policy, this report deals with what the League refers to as Natural Resources.

We began this item in 1956, and in the late 60s renamed it Environmental Quality. This past year we went back to the first title. We do lap over into other study items, such as Human Resources and International Relations. All three of these are known as "National Study Items," which means all Leagues throughout the country participate at both local and state levels. Many publications are supplied to us

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Mrs. Stencil, Green Bay, WI 54302, has been active in the Environmental field since 1960 on a local, state and national level with the League of Women Voters, Federation of Women's Clubs, Audubon Society, 4-H, Scouts and other youth groups. She serves as a citizen appointee to the Brown County Planning Commission, the Brown County Park Commission, the Wisconsin Air Pollution Advisory Committee, the Citizen's Advisory Committee to Wisconsin's Coastal Management Program and to the Fox Valley Water Quality Planning Agency (208 Program). Mrs. Stencil is often referred to as Green Bay's Professional Volunteer and has received numerous awards for her efforts including Distinguished Service Awards from the City of Green Bay, the Jaycees, the Wisconsin Federation of Women's Clubs, Brown County 4-H, Friends of University Extension, Madison. The Center for Public Representation, Brown County Conservation Alliance, Fort Howard Paper Foundation, American Motors Corporation, and Region V of the Environmental Protection Agency have also conferred their highest award on her for natural resources conservation.

researched and written by a professional staff employed by LWV in our Washington office. On the state level, studies are also conducted by League volunteers and some very good publications are available to members at cost, usually one dollar or less. When local Leagues conduct public meetings these publications are available to the public at that same cost; we provide free copies to libraries, units of government, planning agencies and the like. A list of publications available can be obtained by writing the state office at 433 W. Washington, Madison, WI 53703, or from other local leagues.

Under Natural Resources, we deal with Water Quality, Air Quality, and Solid Waste Management. Lands Use and Energy are separate items since they require so much work and attention. We share committee people for continuity. Our target audience is persons of voting age with special emphasis on those in decision-making roles; elected officials and agency personnel. We do have some programs for youth: for Girl and Boy Scouts, 4-H and the like.

We decide on National Study items at each National convention, State Study items at the State conventions, and Local Study items at the local annual meeting. These are recommended by members through a process that moves up from "grassroots" about six months prior to the convention. Items are well-publicized; those receiving the most support are placed before the assembly for vote.

The latest National Natural Resource item was adopted in 1970—Solid Waste Management. A time table was set aiming at member agreement in three years. LWV local leagues formed committees to gather local information. Meanwhile, National LWV developed a Committee Guide—six pages of what and how to start. National staff put out a number of publications, working with various levels of government and agencies with experience. Committees met bi-weekly for reading assignments and sharing of reports. Unit meetings were held to inform the general membership. General meetings open to the public were arranged.

When the idea of closing the local "dump" filtered down from Madison, many League members were asked to serve with local government study groups to share their knowledge. We were asked to help arrange public informational meetings. This is all voluntary work.

The U.S. Department of Interior, as well as the U.S. Environmental Protection Agency, recognized the value of our efforts and each arranged a two-day seminar on Solid Waste Management, selecting one League member from each state to attend. I was chosen from Wisconsin and traveled to Washington to learn what was working and where—then to return home and press for a program. More meetings were held and, following questions supplied by the National League office, we reached member agreement by April 1973.

We renewed our efforts both locally and with the state Legislature, lobbying our position. Dumps and open burning ceased, but we would have liked to see more source reduction of waste as well as recycling, so our success was not complete. We are retaining this study and will continue to press for th s.

About three years ago money was made available by the Environmental Protection Agency. Leagues were asked to compete by writing up a proposal for public participation in Section 208 (area-wide approach to improving the water quality of a river) of P.L. 92-500, the Federal Water Pollution Control Act Amendments of 1972. Twenty Leagues would receive $3300 each for work to be done over a nine-month period.

The six Leagues in the Fox River Valley (Oshkosh, Ripon, Neenah-Menesha, Fond du Lac, Appleton and Greater Green Bay) have had a long record of water quality study and action. Generations of wastes from one of the world's greatest concentrations of paper mills and heavy runoffs from roads, farms and housing developments dangerously polluted the Fox River-Winnebago watershed. Members were certain that areawide land use and sewage treatment planning was the only way to go for the five-county watershed.

When hearings were announced on a possible 208 designation, within a few months Leagues geared up for coordinated action. I wrote and circulated a statement; members agreed and testified at hearings in Oshkosh and Green Bay. The 208 planning was approved and a grant established. The Fox Valley Water Quality Planning Agency (FVWGPA) was set up to manage the program.

Section 101(e) of the Water Law requires public participation. I wrote to the just-appointed planning agency director recommending several area League members. Three were appointed to the Citizens Advisory Committee to the Agency.

Because of our earlier involvement, I wrote a proposal and received one of the 20 grants.

My first step was to form a committee with two members from each of the six Valley Leagues. We met and set up a budget and work time table. We worked with the Regional Planning Agencies and the Fox Valley Water Quality Planning Agency to gather information. We developed a slide presentation following the river to show sources of point and non-point pollution. We were able to obtain many slides using infra-red photography to show polluted points in the water. We prepared a brochure telling what 208 was and what it was intended to do in very basic language; 10,000 were used. We decided to go to already organized groups and in five months appeared with our slides before 33 civic and governmental groups. We attended three state conventions, with our slides and display, in the Green Bay area.

We arranged to get on a number of radio "talk shows" and also a half-hour TV program, with aid from FVWQPA. The Oshkosh and Fond du Lac Leagues both planned evening meetings in waterfront parks that were well attended. These Leagues also worked with a weekly paper and enclosed our brochure to be delivered to every home around Lake Winnebago.

We also worked with the 208 Section of the Wisconsin Department of Natural Resources at Madison to set up a lighted display to be used in banks, shopping centers, fairs, etc. This is still in use.

Another unusual program was developed with the National Izaak Walton League. High school seniors were bused to the Fox River, one group in the morning at one site, another in the afternoon at another site, to do water testing and related activities to raise their consciousness as to the river condition and the surrounding land use. We all met later in the day to discuss our findings and make suggestions for improvement. We did this on two days—two workshops in Oshkosh, two workshops in Green Bay.

Our program was judged as one of the best, having reached over 6000 people of varied ages and interests. We were written up in the League's National Voter and recognized by National Wildlife Federation.

Not all action is of a national scope. A member who has a desire to study a local Natural Resource issue may bring her or his idea to the local League at program planning time. If enough interest is expressed, the board of directors will approve it and the issue will be brought to the annual meeting for discussion. If passed, the item is adopted.

Again a committee is formed and timetable set for member agreement. After study, unit, and general meetings, a number of questions are put to the members to agree, disagree or modify. The result becomes our position and the committee then lobbies the city council, county board or whomever to advance the League position. This process usually takes about two years of study and preparation—perhaps a long time, but it provides a complete, factual package for any person interested.

The Greater Green Bay League has completed such a study on a Safe and Adequate Drinking Water Supply for this area. To date, many people do not agree with our findings—that a crisis is ten years or less away. We continue to keep informed and present our program when invited. We have some very good support and time will tell.

Funds for these studies are secured from membership dues and from a finance drive we make each year. We also pay to support the state and national Leagues through this method.

In assessing the years I have worked in Natural Resources, both as a League member and with the Women's Club of Green Bay, I have found that there is much a private citizen can do. It is important to get into the action early and stress the four "ates"--educate, participate, legislate, and administrate—all the while keeping your sense of humor and humility. People relate easily to that kind of person. That formula has made me rich, not money-wise, but in friends. Many doors are opened that would otherwise stay closed. As a bonus I have won many fine state and national awards including one from Region V of the U.S. Environmental Protection Agency. But best of all is the feeling that you have contributed to help make a better place for people to live.

THE YOUTH ENVIRONMENTAL SOCIETY

by Daniel J. Van Abs*

In case you're wondering where all the Earth-Day flowers have gone, here is one answer. Conceived and developed by high school and college students in the state of New Jersey in the first flush of the environmental movement, the Youth Environmental Society is still going strong, pledged "to work, primarily through youth, toward making all citizens knowledgeable about their environment and helping them use this knowledge in creating a better community, state, and world for themselves and future generations." In this frank report, we get an inside look at the joys and traumas of voluntary environmental education.

Philosophy and Purpose

The Youth Environmental Society (YES) is an organization conceived and developed by high school and college students in the State of New Jersey. Of the state's more than 200 environmental organizations, YES is unique: a statewide, youth-oriented effort that encourages student participation in the environmental movement and assists them in their activist projects. Our purpose is "to work, primarily through youth, toward making all citizens knowledgeable about their environment and helping them use this knowledge in creating a better community, state and world for themselves and future generations." YES is a rallying point, an outreach program and a means of communication for New Jersey's student activists.

The basic ideas behind YES were developed from 1970 to 1976, when we incorporated. Although our scope and programs have changed over time, our basic reason for existing remained constant. Students, though they were the impetus behind many environmental activities in New Jersey during the early '70s, have never found a comfortable role in the activities of the state's predominantly non-student organizations. Student groups lack the resources, information, inter-organizational cooperation and mobility so necessary for effective activism. Few non-student groups take more than a passing interest in helping student efforts succeed. Also, student groups suffer from an instability caused by the graduation of their most experienced members. This instability can be greatly offset by the existence of an adviser who works with a group through the years. This adviser may be an interested and knowledgeable teacher, or it may be an organization.

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*Mr. Van Abs is a founding member of the Youth Environmental Society, P.O. Box 1127, New Brunswick, NJ 08903, and served as the organization's first Assistant Director in 1978. He is currently attending the State University of New York-College of Environmental Science and Forestry, in the Doctoral Program of the Graduate Program in Environmental Science.

YES tries to fill the roles that could be filled by the state's many organizations and that should be filled by teachers and professors.

History

The evolution of YES, both in philosophy and practical organization, reflects a broadening of its founders' horizons as they progressed through high school, college and beyond. Over an eight-year period, YES has expanded both in geographical area covered and range of services envisioned.

To be absolutely correct, the idea for a statewide, student environmental organization occurred in many places over many years, but YES evolved most directly from the work of high school students in Camden County, near Philadelphia, from 1970 through 1972. These students, representing a dozen high school ecology clubs, formed a coalition called the Ecological Communications Center (ECC). They hoped to increase individual and collective efforts among their groups by sharing information and ideas. The program continued successfully for two school years. When several key leaders graduated, the students were forced to consider ending the project. This prompted the first expansion of our philosophy. A student environmental organization at Rutgers University in the City of Camden offered assistance to the ECC, with the hope of expanding to a tri-county effort. In their only major project, students from two high schools and the university launched a major water conservation program that caught national attention. Although short in duration, the one-year alliance laid the basic groundwork for YES, which still places heavy emphasis on college-high school interactions.

During 1974 another major expansion of YES occurred, and the name of "Youth Environmental Society" first came into being. YES made the jump from local effort to statewide organization through the work of three founders, including Maurice Sampson (one of the original Camden students) and myself. By 1976, seven college organizations were involved directly, with ten high school efforts involved indirectly. Also in 1976, Sampson and I co-authored Concepts for Youth Environmental Action in New Jersey, which outlined YES's reasons for being, our envisioned programs, and a possible structure. The following year was spent developing programs and a core of college organizations. Until mid-1977, YES was strictly volunteer. More than anything else, YES was a coalition of college organizations, providing a means of communications and a feeling of unity. Our Board of Directors, representing the various regions of the state, was formed during 1977. This Board started planning the growth of the organization.

Finally, after seven years of slow expansion, YES was faced with a question of great importance. Should we go professional? A full-time staff was not necessary to the survival of the group, but it would greatly expand our capacity for providing services to students throughout the state. Also, both Maurice Sampson and I graduated from college, giving YES the option of having two founders as staff members. The Board decided in favor of a full-time staff, and Sampson was named Executive Director. Both he and I worked as volunteers

while seeking grants from the Comprehensive Employment and Training Administration (CETA) and foundations.

Both arrived in late 1977. A foundation grant supplied funds for administrative and program costs. We hired a staff of five through a CETA Title VI Program, and embarked on a full and painful year. Without a doubt, the decision to hire a staff forced changes in the structure and operations of YES that the organization was not yet ready to bear. The 1977-78 school year saw YES undergo a painful metamorphosis that both threatened its destruction and catapulted it into statewide attention and a respected position among New Jersey environmental organizations.

The Obstacle Course

There were three major obstacles to the growth of our organization. Failure to deal successfully with any of them would at least stunt YES's growth, and might destroy it.

Funding, either cash or through in-kind services, was essential. All volunteer efforts can survive on minimal funds, but major organizations require a sizeable and, importantly, stable financial base.

Success of our programs was also very important. Many groups have died because their programs fell behind the times or lacked audience appeal. Good programs enhance an organization's opportunities for attracting funds, and a stable financial base gives the group the opportunity to innovate, to build upon its programming successes.

For all of this to occur, we needed an administration capable of flexibility yet dedicated to the organization's goals. Such an administration, whether the Board, a professional director or both, realizes a need to constantly update programs, capitalizes on program successes, is willing to cut its losses when necessary, allows program staff members the freedom they need to operate, emphasizes frugality and minimizes the expenditure of staff time and funds in programs that do not advance the interests of the organization.

Funding, program and administration: they account for the major portion of any organization's problems. When YES entered its first year with a full-time staff in September of 1977, we had no funding, few programs (we did have many ideas, though) and very little administrative experience. Over the next year, we ran the obstacle course.

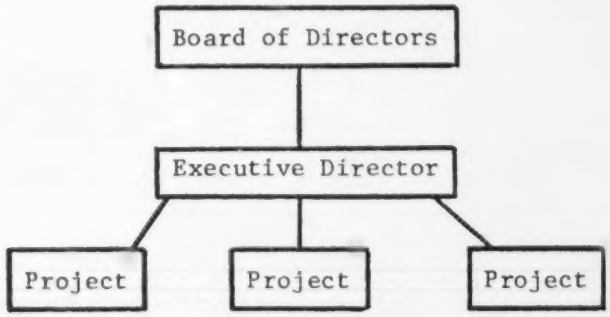
During the fall of 1977, we concentrated on the funding problem. We knew that there were many programs that YES could adapt to its purposes once money was available. No administrative problems existed as we had no staff. Funding would supply us with both staff and programs.

The first success occurred in September, when Middlesex County Comprehensive Employment and Training Administration (MCCETA) approved our proposal to hire a staff of five in November of the same year, operating from YES's State Coordinating Office in New Brunswick.

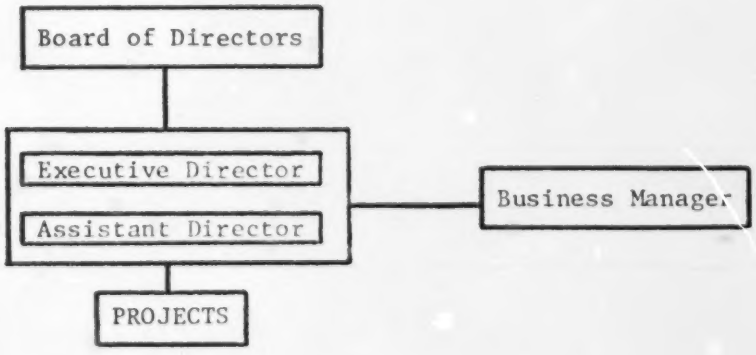
As a Title VI program, the grant lasted for one year, supplying YES with the staff that we needed to put our ideas in action.

Also during September, David Brower, President of Friends of the Earth, introduced us to Howard Quirk, Executive Director of the Victoria Foundation. In November, Victoria Foundation granted YES $10,000 for general costs, with a $10,000 challenge grant to be matched during 1978. With these funds and the MCCETA grant, YES started planning programs for the upcoming spring.

Meanwhile, the advent of a full staff spotlighted our administrative inexperience. Other than Sampson and myself, none of the staff members had ever worked in the environmental field. CETA is a program for the underemployed and undertrained. Title VI workers often have degrees, but usually have little experience in their intended field. Training became a priority, but our difficulties were compounded by personality conflicts and the hiring of staffs for two new YES-CETA projects in Essex and Atlantic Counties. Both new staffs exhibited the same problems as our first. Finally, in February, March and April, we learned how to cut our losses. Several people were fired and the structure of YES was changed. Previously, our structure was:



In March our structure became:



The Business Manager assumed the organization's financial chores and the Assistant Director became responsible for the day-to-day operations of all YES projects, leaving the Executive Director free for

fundraising, program planning and the overall management of the organization. We have found this system to be an excellent way to divide up the enormous amount of work that the Executive Director once had to handle.

Meanwhile, program staff members had developed and conducted several very successful programs. In February YES sponsored a Leadership Training Seminar for collegiate activists. Over 30 students from eight colleges attended the two-day event and participated in workshops that helped them identify ways of organizing environmental activities on their campuses. The students concentrated on planning their organizations' activities for the spring. Some discussed programs, others planned fundraising activities while still others discussed ways of revitalizing their groups, changing their leadership structure and reaching the students on their campuses. The seminar was very successful, and has become a permanent program of the Youth Environmental Society.

In April 1978, YES held its Second Annual Convention. Unlike the poorly publicized 1977 Convention, the 1978 Convention drew 120 plus participants who attended workshops, viewed exhibits by New Jersey environmental groups and listened intently to New Jersey's Energy Commissioner discuss our state's many energy problems.

Our third success was our largest. On May 3, 1978, approximately ten million people nationwide celebrated Sun Day, an Earth Day-style event that brought home the message that solar energy is available today for uses such as hot water and space heating. YES served as the New Jersey Sun Day Clearinghouse, supplying information to close to 50 events to the press and public, helping people organize Sun Day programs and distributing 50,000 pieces of information and paraphernalia, including calendars of events, buttons, tee-shirts and a follow-up newsletter. Our activities brought us accolades from the General Assembly of New Jersey, the Commissioner of the New Jersey Department of Energy, the regional office of the United Auto Workers, Congressmen and many others, and a grant from the U.S. Department of Energy to support our solar energy education programs. Fittingly, the two largest programs in the state were planned and run by college students. For YES, this was proof that with the right resources students can be highly successful activists.

The spring of 1978 had a negative side, though. With Sun Day, the Convention, and our Atlantic and Essex County programs all running at full steam, our administration was hopelessly overloaded and our finances were strained to the limit. We proved that our programs were sound and that we could operate them successfully, but at a price. Our staff was exhausted (half were sick within one week of Sun Day), our finances were low and many administrative problems had become evident.

After a month of rest and evaluation, the full staff met for a 48-hour staff meeting, styled after the Institute for Cultural Affairs' "Town Meeting" format. Together, the administration and program staff attempted to identify the aspirations of the organization and all of the problems that prevented us from operating efficiently and

effectively. We developed a three-month plan for setting YES back on its feet before the start of the new school year in September. Priorities included fundraising, detailed program planning and budgeting and establishing permanent administrative and personnel policies. In August, the last two were completed, providing a means of avoiding major problems in program and administration during the next year.

Only fundraising remained a problem. From May through July of 1978, YES flirted with bankruptcy. We couldn't secure funding from corporations or foundations without detailed programs and budgets, which were not completed until August, though we made preliminary contacts with several corporations. As our programs operate during the school year, few program funds are generated during the summer months. In July we came very close to insolvency. Fortunately, we had matched part of the Victoria Foundation's challenge grant during the spring, and receipt of the challenge grant funds allowed us to stay afloat. In August, YES started a major corporate and foundation fundraising drive. Also during August, YES published the New Jersey Environmental Directory, a $3.00 publication that provided us with our first hope for self-generated funds. Along with a major membership drive in September, YES should manage to build its financial base enough to insure survival. If so, we will have met and dealt with all three obstacles, some of them more than once, and should be able to pull away from our present dependence upon CETA funds for our staff salaries.

Fundraising for YES

One piece of advice about fundraising that has come to us repeatedly is to approach major sources of funds first, and then build up the many minor sources that will support the organization over time. A major program demands major amounts of money. That money is not going to come from bake sales or membership; at least not initially.

Major sources of funding are threefold: corporations, foundations, and government. Possible the easiest government grants are CETA, for staff salaries, and the one-shot grants such as our U.S. Department of Energy solar energy education grant. Much harder are the competitive grants, such as HEW's Environmental Education and Community Education grant programs, but they also tend to fund larger programs, with the possibility of multiple year grants. YES is pursuing both types of grants, along with others.

Foundations are potentially important sources of funds for YES. The Victoria Foundation grant providing general operating costs was unusual. Foundations, we find, often have fairly specific ideas of what they will fund. Credibility is very important here, as well. Still, there are a good number of foundations that fund youth, educational and environmental programs. We feel that foundations will always play a role in our future, especially in the next several years.

Corporations give funds to programs that they feel are "good causes." We find that high technology corporations (such as research firms and pharmaceutical companies) tend to be more interested in hearing from

us. As of August 1978 we have a number of corporate proposals pending. Credibility is everything in this case, and recent program successes are excellent levers when asking for corporate contributions. Again, we feel that corporate contributions will always be a significant source of funds for YES.

Self-sufficiency is the dream of most organizations, and YES is no different. Some major avenues toward a self-sufficient status are membership, publications, consulting fees, payment for services and bequests.

As far as we know, few major organizations derive over half of their operating funds from membership. Presently, YES would need to multiply its membership by an enormous factor to reach the 50 percent mark. Still, membership is highly important as a source of many types of support, including dues money. YES conducts membership drives during all of its program periods.

With the advent of the New Jersey Environmental Directory YES has launched a drive to provide information and simultaneously raise money through publications. Although the Directory will only raise 1-2 percent of our operating costs, it points a way toward increased self-sufficiency. Publications also give an air of permanency to an organization, which is a benefit beyond cash value.

Although YES has never been involved in consultant work, that will become a possibility as we gain an expertise in developing programs for students and other activists. We expect to become involved in consulting over the next two years, working with private firms, government agencies and school systems.

Several programs that YES sponsors, such as the Leadership Training Seminars and the Convention, involve a cost to the participants. We attempt to break even on each program, which allows us to present an educational program at no net cost to the organization. These programs also tend to generate new members, which can be considered profit. YES is constantly expanding the number of programs we offer, which will in turn support our staff.

Frankly, we do not expect bequests to YES in the near future. We have not achieved the stature necessary to attract this sort of funding. In the long range, though, bequests could provide a source of steady funds for the organization, helping us reach toward the perhaps unattainable goal of self-sufficiency, where all of our programs would be supported from within the organization.

The Future

The future looks good for YES. Still, the needs of the students are so great that we can't possibly cover them all. We can only serve as a catalyst and hope that teachers and other environmental organizations will have the initiative to fill the gaps. Our greatest goal is to make our organization unneeded by encouraging the educational community to take up the burden that it has neglected.

Both in program and administration, we are better prepared than previously. Financing our programs remains the major obstacle, and probably will be for years. Several other items, such as further training of our staff and the strengthening of the Board of Directors, require time and effort but are within our reach. Other than funding, our major problem will be reaching enough students and educators to really make a difference. We have defined several methods for reaching our audience.

We pick major, New Jersey issues that will attract the attention of students and educators. Through our clearinghouse and visits to classes and student organizations we spread information on the issues and discuss ways that the students can become directly involved in the issues. As they require further information, contacts, resources and help in planning their own programs, YES works with them. YES also plans major educational programs, workshops and seminars on the issues, giving the students opportunities to meet each other and plan inter-school programs. Our 1978-79 school year programs revolve around three issues: recycling (developing community recycling programs), energy (a wide spectrum of issues and projects) and the Pine Barrens, a million acre wilderness in New Jersey, the nation's most densely populated state. Our work in these three issues constitutes the major portion of our programs.

We also reach directly to the state's educators with exhibits at conventions, articles in education journals and participation in the New Jersey State Alliance for Environmental Education, a coalition of educational organizations. Teachers hold the key to the problems that our student activists face; their help is crucial.

We provide training for students through our Activists Training Institute (ATI), a catch-all for our Leadership Training Seminars, issues workshops and activists workshops. ATI participants range from high school students to adult (loosely defined as non-student) activists, depending on the program.

Finally, we work with the people who make the issues happen. We are involved with government, corporations, educators, and environmental organizations. We are a member of the Pine Barrens Coalition and were a primary force in the development of the New Jersey State Alliance for Environmental Education and the New Jersey "Sun Day" Solar Action Coalition. One of our greatest assets is our ability to cut across the dividing line between interests, for the benefit of the students.

The Youth Environmental Society has a promising future. Its structure will probably change many times, as will its programs, but its reason for being will probably never change, as long as there are students seeking knowledge about their environment and desiring a means of using that knowledge to benefit their world.

Addendum*

In the fall of 1978, the CETA-funded programs expired and were not renewed, due to a reduction in funds available from the local CETA administration for continuing programs. Prior to termination of the programs, however, YES made major gains in program, fund-raising techniques, cooperation with the college organizations and revitalization of the Board of Directors. The Board restructured the activities of the organization, and its members became active in program implementation. Subsequent to the loss of the CETA program, the Board decided to avoid further CETA programs, maintain a small staff (including the Executive Director, Maurice Sampson), and streamline the operations of the organization, delegating most program work to Board members and volunteers. Surprisingly, these ideas place the present structure of YES much closer to its conceptual origins of five years previous.

*This paragraph was added by the author in the proof stages of preparation of this volume--Editor.

ENVIRONMENTAL ACTION FOUNDATION

by Annette Woolson*

Everything is connected to everything else. Everything has to go somewhere. There's no such thing as a free lunch. Nature always bats last. So has Barry Commoner summarized the "laws" of ecology. If there is any organization in the country today attempting on a holistic scale to translate such precepts into public action, it is the Environmental Action Foundation in Washington, DC. A direct spin-off of the young people's crusade that organized Earth Day in 1970, EAF continues today at the forefront of nationwide environmental education for environmental action. Its hard-hitting research, publications, and campaigns currently emphasize electric utilities regulation, solid waste and materials conservation, transportation reform, beverage container legislation, energy alternatives, and water quality. EAF is "where it's at."

Overview of General Purpose

Environmental Action Foundation (EAF) seeks to enhance the compatibility of humanity and the environment by working toward the prevention of pollution, the reduction of use of non-renewable resources, encouragement of conservation of energy and materials and elimination of threats to natural cycles. EAF encourages an economic system that is not dependent on continually increasing consumption of materials and energy. It favors a stable population level which is compatible with available resources.

EAF is committed to helping citizens gain control over decisions which affect their lives: by creating new channels for action which will increase the impact of all citizens on those decisions and by broadening citizen participation at all levels of existing political and economic decision-making structures.

History

On Earth Day, 1970, national attention was focused for the first time on a broad range of environmental problems. The national staff which coordinated that event felt that people's call to action should not be muted and that citizen pressure should continue to hold politicians and polluters accountable. The Earth Day staff organized EAF to coordinate that effort.

Ms. Woolson is the Administrative Coordinator at Environmental Action Foundation, Washington, DC 20036. Having worked in this capacity for two and one-half years, she has come to appreciate the complexity of the social, political and economic barriers to changing lifestyles and expectations toward an environmentally sound world. It is this change that EAF's staff has seen as their goal for the past eight years.

EAF aimed, through research and educational efforts, to explore the then undocumented pollution of America: pollution of the air, water, and land; and to see that this knowledge increased people's awareness and gave them a foundation from which to push for change. EAF has gone on to examine the public policies which underlie environmental problems and has been able to synthesize concern over the environment with an analysis of resource and energy shortages, unemployment, consumer injustices, institutional structures and national priorities.

EAF has positioned itself between decision makers on the national level and community activists and groups on the local level. Projects within EAF have emphasized the importance of close and frequent contact with local citizens and the need for providing them with access to technical, informational, and organizational expertise. This approach has allowed the organization to develop and maintain a strong local orientation, unique among national environmental groups.

EAF has been funded over the past seven years by numerous grants from foundations, contributions from individuals and funds from government agencies. These have all been obtained by the active fundraising efforts of EAF's directors.

At the end of 1977, EAF's projects had published a total of 15 reports and numerous smaller publications, such as experts lists and citizens action guides. In addition, the organization distributes four national newsletters which deal with specific environmental areas (solid waste, deposit legislation, water management, and electric utilities/nuclear power).

In an effort to improve the quality of its own working environment, EAF has attempted to make its administrative structure as democratic and non-hierarchical as possible and has established the organization as a collective. As EAF has grown, it has found a need to differentiate certain administrative functions. For example, it has become advantageous for day-to-day operations to be determined by each project's staff with an administrative staff performing overall managing functions. However, major decisions and policies are made by the entire staff at weekly meetings. Although responsibilities differ, EAF recognizes the importance of all staff members by providing equal pay and voting rights.

Past Activities

Past efforts to implement our goals of public education and action have fallen into several categories. Projects have dealt with a variety of issues: electric utilities, solid waste, media, the visual environment, nuclear power, the B-1 bomber, and transportation. Below are listed the particular activities of the organization over the first five years:

1. Assessed the impact of media on environmentalists. This study was done for the Public Broadcasting Environmental Center (1971).

2. Published a directory of environmental organizations (1971).

3. Served as a clearinghouse for environmental information for the U.S. Office of Education (1971).

4. Made a study on the safety and environmental aspects of nuclear energy and published a booklet to give citizens a short, readable introduction to the subject (1973). This was updated and expanded in 1976 as Countdown to a Nuclear Moratorium, an anthology which presents safety, economic and political arguments against nuclear power. It also analyzed the potential of conservation and renewable energy resources.

5. Did a survey of state regulatory commissions to identify all actions which they have taken to discourage promotional activities or to encourage the conservation of energy (1972).

6. Assembled a bibliography on electric utility rate structures, advertising and pricing in response to the need for citizens to have information on how the industry uses rate increases to finance increased energy production. This information is used by consumers who attend hearings of state regulatory commissions to challenge growth of utilities (1973).

7. Published a basic information and organizing manual for citizens who want to challenge utilities on environmental, consumer and social grounds. The book, How to Challenge Your Local Electric Utility, has sold over 20,000 since its publication and has become the "bible" of the utility reform movement (1974).

8. Published a study on the fuel adjustment clause, which accounted for 65 percent of the increased cost of electricity in 1974. The book outlines strategies and methods to challenge the use of the clause (1975).

9. Prepared a paper on "Regulating Electric Utilities: Incentives for Energy Conservation" which was distributed to over 1000 people attending a series of conservation workshops sponsored by the FEA (1975).

10. Began producing and distributing to about 2500 individuals an eight-page monthly newsletter, The Power Line. It covers a range of utility issues and reports on citizen actions (begun 1975).

11. Testified before two Congressional Committees, provided an analysis of the electric power crisis at national meetings of the National Consumer Information Center, the National Rural Electric Cooperative Association, Critical Mass '75 and the New American Movement. Also conducted workshops and discussions on utility issues in over ten states (1975).

12. Published Phantom Taxes in Your Electric Bill, which documents for the first time that in 1974 the nation's largest utilities charged their customers for almost $1 billion in federal income taxes which the industry never paid. The

book has been used by citizens' groups opposing utility rate increases (1975).

13. Put together a resource guide on electric utility issues and a national technical experts list as sources of information and expertise for citizens to use in campaigns against utility abuses (1975).

14. Worked with citizen groups in New York and New Jersey to form a coalition of environmental and citizen groups which focused on local solid waste problems and raised consciousness about the overload of trash, dangers of disposal sites and wasteful packaging (1973).

15. Made several short films on solid waste, one of which dealt for the first time with the important place of the garbage man in the solid waste picture. Others, aired as TV spots, emphasized the citizens' role in solid waste management (1973 and 1974).

16. Held a joint conference with the Oil, Chemical and Atomic Workers Union in New York, bringing together workers and environmentalists to find common concerns with pollution in the work place (1973).

17. Conducted workshops in New York to show teachers how solid waste issues can be included in curricula (1973).

18. Have sponsored several campaigns centered around resource conservation. Conducted an "unwrap" campaign in New York City to emphasize the importance of source reduction and consumer power in solving solid waste problems (1973).

19. Assembled a computerized list of citizen activists into a national communication network. The idea is to make exchange of information on efforts to deal with solid waste easily accessible between local groups. Also the groups on the list can use EAF resources drawn from government and industry sources, public interest groups and private experts to find facts on solid waste technology, economics and regional plans (begun 1974).

20. Established a national coalition of solid waste activists, composed of two key representatives from each state, which disseminates information to and encourages involvement of local citizens groups and individuals (begun 1975).

21. Have researched and published The Garbage Guide, a series of fact sheets on solid waste issues such as plastic bottles, source separation, media coverage for local solid waste groups (begun 1975).

22. Involved in a campaign against the supersonic plane, the B-1 bomber, and published a book and fact sheets detailing the bomber's environmental and economic drawbacks. Also,

EAF became a stockholder in Rockwell International and General Electric, two of the three major corporations receiving research and development monies for the B-1, to force the corporations to produce full-scale studies of the bombers environmental effects before proceeding with construction. EAF went on, in early 1977, to file a lawsuit against the U.S. Air Force. Along with six other national organizations, EAF asked for a court order to stop the U.S. Government from spending additional money or approving contracts on the B-1 bomber until an adequate Environmental Impact Statement was prepared. President Carter later in the year decided to block the plane's production funding.

23. Used EAF's national focus to provide citizens with a better grasp of transportation problems and planning in their communities. In 1974, the Transportation Project worked to get the public involved in hearings in the northeast U.S. which would result in the redrawing and eliminating of 25 percent of the rail routes in the area. The increased citizen involvement made it possible to consider environmental, consumer, social and economic impacts. The project has acted as a resource center, sending out news alerts with up-to-date information on transportation to over 3200 groups and individuals. And it has provided help in devising models for citizens to evaluate their transportation systems and in monitoring state actions to ensure that adequate environmental impact analysis is conducted and that regulations are enforced. The project also published a handbook in 1977 for citizen activists. The End of the Road gives local groups the political, technical and legal tools they need to effectively determine their communities' transportation priorities.

24. Worked for several years (1974-5), through the Center for Visual Environment, to encourage residents of urban areas to work to improve and preserve their communities' identities. A Guide to Neighborhood Ecology was published which contains information on available options in dealing with manmade environments.

Recent Work (1976-present)

Recent projects have focused on utilities, solid waste issues and deposit legislation. Transportation, visual environment and the B-1 work have either ended at EAF or spun off into other groups.

In 1978 EAF began a water project, opening up a new area of research and work for the organization.

Utilities

1. Kept up-to-date information in its utility action guide, updated Phantom Taxes for 1976, and continues to keep citizens aware of current utility issues through The Power Line, which goes out to about 3000 subscribers.

2. Published in 1977 a statistical comparison of the nation's 100 largest power companies. They are compared on such issues as rate structure, environmental protection, tax overcharges, excess generating capacity and power demand projections in a manner which is useful to citizen groups. This book, called Utility Scoreboard, is an expanded version of earlier reports on phantom taxes and takes in more factors for comparison. It has already been used by many citizens groups across the country to fight rate increases and has been praised by public utility commissioners for its compilation of useful facts.

3. Published a book on Taking Charge: A New Look at Public Power in 1976. This study discusses the environmental and social benefits of public ownership of electric utilities, presents a concise history of the industry and offers a comparison of private versus publicly-owned utilities. It also provides citizens with information on how they can transform utility structures into public power systems designed to better meet their needs.

4. Published a study on Nuclear Power: The Bargain We Can't Afford in 1977. This book explains how citizens can use economic arguments to challenge the construction of nuclear power plants and gives details on why such energy is actually very expensive despite power companies' claims. It encourages the anti-nuclear movement to focus on a new forum—the state utility commissions which regulate utility rates.

5. Continued to provide technical information on utilities to thousands of individuals and citizen groups throughout the country. At present EAF receives an average of 100 requests for resources and organizing help each month.

Solid Waste

6. Published Bottles and Sense in early 1976. This booklet presents arguments in favor of returnable beverage containers by examining the impact of returnables versus throwaways from the standpoint of energy, employment and economics.

7. Published a study, All's Well on the Oregon Trail, which refuted Alcoa's put-down on the success of the bottle bill in Oregon (1976).

8. Published an extensive review of resource recovery systems operating nationally in 1977. Resource Recovery: Truth and Consequences details their operation, examines the economics and energy behind resource recovery, and provides a thorough reference for state and

local officials, environmental groups, and individuals on the pros and cons of this high technology approach to handling our garbage.

9. Launched, in 1977, the Campaign for Materials Conservation—a series of TV, radio, and print ads urging conservation and thoughtful consumption. The TV public service announcements were aired by over 200 stations and seen by 120 million viewers. The Campaign also served to spur the efforts of local groups which prepared their own programs. Response for further information, provided by a brochure on materials conservation, was quite enthusiastic.

10. Continued to produce and distribute The Garbage Guide to the solid waste community. Recent Guides have covered resource recovery, office paper recovery, sewage sludge, and landfills.

11. Continued to enlarge its nationwide communications network. The network now lists over 6000 citizen groups, individuals, businesses, and industries and has been instrumental in helping groups to plan effective state or regional conferences on solid waste. Besides this established network, the project responded to over 1000 mail requests for information in 1977. In order to handle these requests, the project has put together a solid waste resource guide and experts list. These are two readily available sources of information on recycling, education, waste reduction and expertise in solid waste.

12. Brought activists to Washington, DC in 1977 from throughout the country to discuss waste reduction, resource recovery and the Resource Conservation and Recovery Act of 1976 RCRA). EAF has been very active in making sure that citizens are heard during the rule-making process for RCRA and has itself given written and oral comments on the draft regulations of the bill. The proceedings of the conference, Talking Trash, were compiled and published.

Deposit Legislation

13. Created, in 1977, the Deposit Legislation Project and separated that work from solid waste. Momentum has been gathering since Oregon first passed its bottle bill and now seven states have passed legislation requiring deposits on beverage cans and bottles. The project is helping more states win deposit bills with the goal of eventually having a national deposit law. The project provides local groups with educational materials, organizational expertise, tips on fundraising, publicity and campaign strategies. It has published fact sheets and a resource guide and puts out a newsletter, Deposit Legislation Countdown, to keep citizens informed of local, state and national developments and to share information about the beverage industry.

Water

14. In early 1978 began a Water Project for the purpose of establishing a citizens' network on water issues. The project aims to involve a greater number of citizens in the important decision-making process of water quality management by promoting the exchange of ideas between both national and local groups. This year the staff is conducting a survey of citizen organizations in each state to identify those groups most actively involved in water management issues. It also publishes a newsletter, Waterways, which presents complex water issues in straightforward language and keeps groups informed about various water management strategies used across the country. The project also serves as a national clearinghouse for information on water management issues.

Measures of Success

This is a difficult area to write about because of the sometimes intangible nature of the work EAF does. The clearinghouses are all in touch with and give information to many, many citizen groups and interested individuals. Our measure of success in this area is the number of times citizens have participated in hearings over regulations, testified before public service commissions, or organized a demonstration or meeting on what their town can do about cleaning up its landfill site. And, from the responses we receive from citizens, we feel our efforts in this area are successful.

Similarly, our books are often written in handbook formats and designed to help citizens challenge their local electric utility with facts and figures, fight highways, or give information in a concise, understandable way about a variety of environmental issues. The success of these books can be measured by the comments people write, by the reaction of the institution whose toes get stepped on (e.g., the electric utilities), by book reviews, and the number of books sold. Basically, EAF feels successful using these criteria. Certainly, some books have particularly good reception. However, the measure of how many we sell is not necessarily accurate, as some issues have more widespread appeal and interest to a general audience, some are useful only to activists in a particular area (utility scoreboard, e.g.).

There is also the area of press coverage of our activities and our own campaigns to raise consciousness and "get the message out." It is gratifying to see various of our staff quoted in the Washington Post, the New York Times, and many trade newspapers and magazines. It lets us know that what we have to say is newsworthy and will be read by a large number of general citizen audiences.

Our campaigns, like the campaign for materials conservation and the Deposit Legislation "Containers to Carter" campaign (the project initiated a nationwide mailing of cans to President Carter to emphasize to him the need for returnable containers to cut down on trash) have usually met with success, whether this means press coverage, citizen action, or spreading an environmental message to citizens who are not usually involved in such concerns. EAF believes it's getting better at such campaigns as the organization gains more expertise over time.

One area in need of improvement is the marketing of EAF publications. This in itself could be thought of as a campaign to get more of EAF's information out to the general public. It is an area often neglected by public interest groups. EAF hopes to work out a more rigorous marketing procedure for the coming year.

Future Plans

Besides continuing efforts in the Utility Project on electric utility issues, EAF will most likely expand into solar energy issues with a book on the problems and politics of switching over to solar as a source of power. We will start up a project on Nuclear Economics, which will build on EAF's previous work on economics and utilities and will widely publicize the economic arguments against nuclear power. The Solid Waste Project will move into organizing regional conferences on solid waste issues and retain its clearinghouse functions. We hope to begin a new project on toxic substances, probably focusing on substances which effect human reproduction.

Our Deposit Legislation Clearinghouse will continue, if funded, to help state efforts on the bottle bill. The Water Project will continue next year with a networking newsletter and a handbook on drinking water contamination and measures that citizens can take to clean up their local water supply.

We are, as always, hampered in our planning for the future by what we can get funds for. Often, what we'd like to accomplish gets circumscribed by what a foundation, the government, or individuals will grant money for. This is a continuing struggle for groups like EAF, but as long as we have receptive audiences and enthusiastic staff, we will continue our efforts.

EPILOGUE

Can any general principles be drawn from these varied case studies of environmental education in the form of citizen participation in resource policy decisionmaking?

At the outset, most of them suggest that environmental action is triggered by a crisis, or certainly by a situation perceived as a crisis. New Jersey's Youth Environmental Society (YES) took its initial impetus from the highly visible forms of environmental degradation in that state. An anticipated reduction in environmental quality served to galvanize citizen opposition to the expansion of the Ames, Iowa, Municipal Airport. The potential ravages of strip mining created a climate of concern which provided impetus for the Northern Rockies Action Group (NRAG).

There must also be present at least a small cadre of people with a deep commitment to a creed or cause. Governors State University's Acorn Group involves students and faculty in energy/environment considerations. Passaic River Coalition raised the questions which forced reconsideration of U.S. Army Corps of Engineers planning in the New York District. In fact, the "cadre" can begin as only one person, as in the case of Jean Smith and her fight for Florida's Holiday Isle.

With some dispatch, the cadre develops a concept of operations and a systematic plan for communication. Wisconsin's Energy Extension Program illustrates a well-conceived activity, as does the Lee County, Mississippi, land use extension effort. Central New York Environment, Inc., has developed an exemplary regional periodical for information exchange.

Then can come the recruitment of cohorts, the forming of consortia, until the movement represents a critical mass of involved citizens and a crystallization of objectives and tactics. These are all aptly demonstrated in the Iowa Community Action Research Group's campaign to pass a "bottle bill," the concerted programs in education, legislation, and litigation of Michigan United Conservation Clubs, and Environmental Action Foundation's prolific efforts in a number of conservation-related areas.

The program cannot be a one-shot affair; it must develop a sustaining continuity. The Izaak Walton League's Save Our Streams program provides a model of sustained effort, on both national and local levels. There is no assumption in Utah that efforts to preserve Gunnison Island as habitat for white pelicans are terminally successful; continued vigilance is accepted as a necessity.

The program's sponsors must maintain a high degree of credibility, as does the Illinois Environmental Council. Such credibility can stem in part from association with reputable educational institutions, such as is the case with Michigan State University's Regional Environmental Planning Program, and with Oak Park and River Forest High School's Pollution Control Center. A favorable political and social climate also seems to be invaluable, if not essential.

Minnesota's Environmental Education Board enjoys a legislative mandate, while the Governor's Commission on the Arizona Environment has received executive initiation and continued support.

Certainly essential is a feeling of confidence on the part of participants, a belief that what they seek is in fact attainable. Confidence has characterized League of Women Voters environmental efforts for many years. Such confidence can also stem from institutional support, as in the case of undergraduate students involved in University of Waterloo's environmental policy efforts.

Yet participants have to be prepared for conflicts, internal and external. The Southwest Environmental Service doesn't assume that an effective air quality plan for Arizona will meet with universal acclaim. Internal conflicts were not resolved in the case of the Pine Creek Watershed Project, while the Steubenville-Weirtron study sketches textbook confrontation between environmental and economic considerations. And participants must adjust to those compromises that are the glue of organized society; the North Mississippi Environmental Education Consortium recognized this fact in its work with the U.S. Army Corps of Engineers. Those involved in environmental policy considerations crossing national boundaries, such as with the International Joint Commission in its efforts at public involvement in Great Lakes decision-making, have cause to consider multiple levels of compromise.

In the last analysis, however, the most critical element in environmental education programs may be cash. Money, right or wrong, is the final factor that seems ultimately to determine success or failure. Thanks to a constitutional amendment providing general tax revenues for wildlife and forestry conservation, for example, the State of Missouri is light years ahead of those states funding such programs only with user fees.

Every one of these "enabling elements" is not in evidence in every one of the case studies here, of course, but enough of them are repeatedly present to suggest that these principles can provide a checklist against which new programs can assess their viability and solvency as they seek to practice environmental education for citizen involvement in resource policymaking, "perhaps our best hope that the United States may be governed more wisely, honestly, and effectively in the years ahead" (Caldwell, Hayes and MacWhirter, 1976).

REFERENCE

Caldwell, Lynton K., Lynton R. Hayes, and Isabel M. MacWhirter. Citizens and the Environment. Bloomington: Indiana University Press, 1976.

ENVIRONMENTAL EDUCATION PUBLICATIONS

SMEAC INFORMATION REFERENCE CENTER

Orders for the environmental education publications listed below may be placed with SMEAC Information Reference Center, 1200 Chambers Road, Columbus, OH 43212. Also available is a complete listing of SMEAC publications in science, mathematics, and environmental education.

Each of these publications may be located in ERIC microfiche collections, using listed ED numbers as catalog numbers.

ED 141 185 Clay Schoenfeld and John Disinger, Environmental Education in Action - I: Case Studies of Selected Public School and Public Action Programs. 1977; 351 pages; $6.00.

ED 150 018 Robert H. McCabe, Current Issues in Environmental Education-III: Selected Papers from the Sixth Annual Conference of the National Association for Environmental Education (Estes Park, April 24-26, 1977). 1977; 280 pages; $5.00.

ED 152 557 Clay Schoenfeld and John Disinger, Environmental Education in Action-II: Case Studies of Environmental Studies Programs in Colleges and Universities Today. 1978; 509 pages; $8.00.

ED 152 600 John F. Disinger, Environmental Education Activities of Federal Agencies. 1978; 173 pages; $3.75.

ED 159 046 William B. Stapp, From Ought to Action in Environmental Education: The Report of the National Leadership Conference on Environmental Education (Washington, March 28-30, 1978). 1978; 104 pages; $3.00.

ED Craig B. Davis and Arthur Sacks, Current Issues in Environmental Education-IV: Selected Papers from the Seventh Annual Conference of the National Association for Environmental Education (Chicago, April 30-May 2, 1978). 1978; 254 pages; $

ED John F. Disinger, Alliance Affiliate Activities: Non-Governmental Organizations in Environmental Education. 1979; 164 pages; $